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EKISTICS

REVIEWS ON THE PROBLEMS AND SCIENCE OF HUMAN SETTLEMENTS

ΟΙΚΙΣΤΙΚΗ

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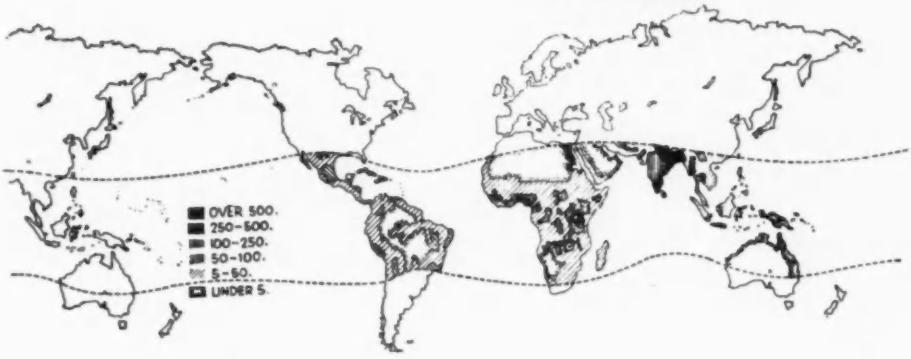

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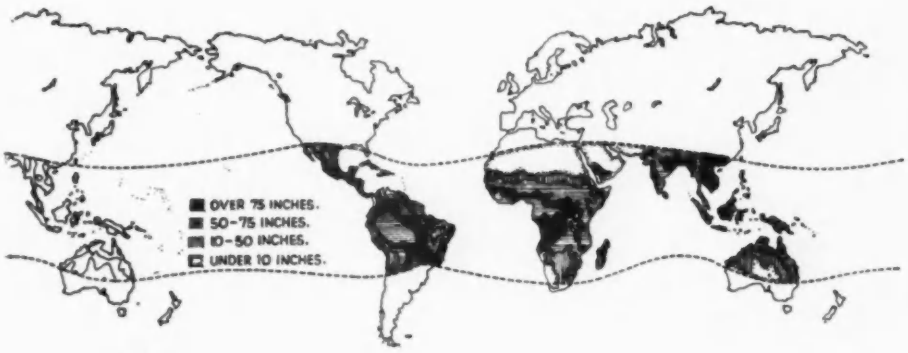

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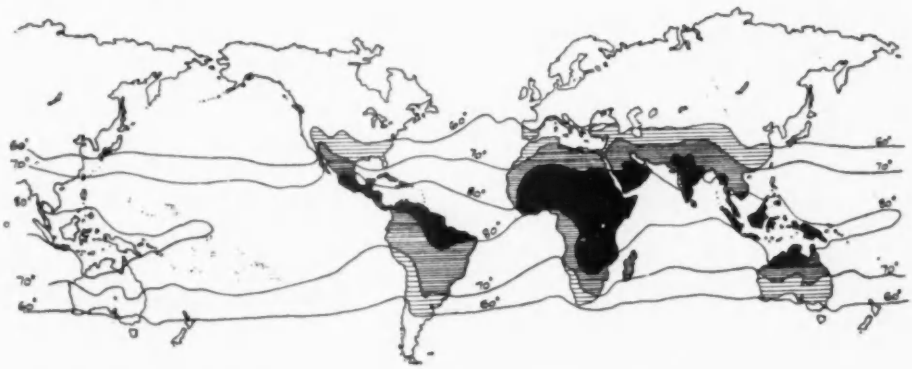

Temperature

THE TITLE EKISTICS comes from the Greek verb OIKO, meaning settling down, and demonstrates the existence of a science of human settlements conditioned by man, influenced by economics, sociology, geography and technology.

PUBLICATION OF EKISTICS is once a month. Its purpose is to develop an interest in a more comprehensive approach to the problems of human settlements. It is addressed to all those interested in the planning and building of better settlements. It can be obtained in exchange for other related publications or by subscription.

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EDITORIAL

It was intended to devote this issue of EKISTICS to projects emanating from or directly affecting development in the hot, humid areas of the world, but -- just before going to press -- we received news of a matter which directly affects all regions of the world. On April 20th, 1961, the Social Commission of the United Nations passed a resolution sponsored by Brazil, Indonesia, Sudan and Yugoslavia (one country from each continent) recommending the establishment of national centers to study urbanization in all its aspects. In other words EKISTICS. The terms of this extremely important resolution are reproduced as the first article in this issue, together with exerpts from the discussion at the Social Commission meeting. As a related occurrence we note that the wide and nebulous field of Community Development has now been merged with Housing, Planning and Building within the United Nations Bureau of Social Affairs. Integration, not compartmentalization, is becoming more and more widespread.

Following this lead article we include a comparative statement of the curricula of five training programmes in the inter-related studies leading to the profession of city or regional planner. These are each new schools, and (except for the Athens Technical Institute) each is oriented towards training for work in hot and humid areas of the world, but the emphasis of their programmes varies.

An abstract follows of an article written by a leading (many would agree THE leading) architect of Japan -- Kenzo Tange. We include some additional comments and illustrations of work done at the Massachusetts Institure of Technology under his tuition. The basis of his teaching here was that since history and experience shows that the location and nature of transportation routes and public services are more permanent than dwellings, and community buildings, it is possible to conceive a new city in which these are the planned structural elements, together with the spaces for the dwelling areas. Then the dwellings themselves and the community buildings are considered as temporary, easily changed or removed. We show the resulting urban form conceived by American students, and next month we hope to present Tange's own solution for an area in Tokyo bay, based upon the same premises.

<u>High density and Low density housing</u>.

The rapidity of the urbanization explosion has caused cities to expand not by degrees but by the addition of entire, urban units, complete with community buildings, whose size is seldom less than 50,000 or so. Their form depends more upon the pressures of space than upon traditional ways of living. Two examples are shown here: one from Hong Kong where the pressures have been as high as anywhere in the world, and where its situation and the availability of high technological skills permit dense

developments of high-rise apartments -- the density rising to the fantastic peak of 1500 people per acre in recent projects, with an open space allotment which amounts to about 10 square feet per head. At the other extreme is an example of what one might call enlightened subdivision of land. It is in Puerto Rico designed by an architect from the Phillipines in a modified Radburn, middle income tradition, with a system of loop streets allowing for footpaths and playspaces along green ways between the ends of the loops. The density is about 35 persons per acre.

Low cost housing.

Low cost housing is the subject of an article abstracted from the first issue of the journal of the Ceylon Institute of Architects, which was inaugarated in 1957 and now has 32 members. This article contains a candid statement of the principles of low cost housing, pointing out that this is not necessarily synonymous with cheap housing.

Two housing materials are next discussed in the context of rapid and efficient provision of shelter with in the hot humid tropics: concrete and bamboo. The first article deals with a fully mechanized process of erecting standardized 650 square foot concrete houses, the second with a simple handicraft method of curing bamboo.

Urbanization and Expectations

Three different but probably universal aspects of the impingement of rapid change upon the habits and expectations of existing populations appear in articles from the Philippines, the West Indies and West Africa. The first handles relations between 'community development' and traditional behaviour and points out that the readiest acceptance of change is in the area involving village participation in festivities: a project to create a stage for fiesta plays will obtain more immediate response than one to raise their economic standard. The inertia which associates 'jobs' with 'hand-outs' is hard to overcome. It concludes that the village level worker must remain longer than two years in one area for his work to have any lasting effect. The increase in population in the Philippines is anticipated to raise the overall density there from 78 to 146 persons per square kilometer by 1977 (the present population density in Cylon is 140 per sq. km.)

The article from the West Indies raises another problem: that statistical unemployment will rise sharply in the wake of urbanization. This is due to two factors. Higher earnings of the chief wage-earner reduce the necessity for sub-marginal employment by other members of the household - but these do not become removed from the statistical labor market. A wider range of opportunity of employment means an

increase in job changing and in immigration, both of which swell the records of available labor. A possible solution, here related strictly to conditions in the West Indies, is to direct as much economic development as possible to the smaller and poorer islands in the archepelago, from which the largest population migration can be anticipated.

The report of the Economic Commission for Africa on transport in West Africa underlines the connections between a primitive communication network and an absence of industrialization together with unsophisticated trading habits: e. g. that a great amount of "wholesale" goods are transported as personal "luggage".

Abstracted from United Nations
E/CN. 5/L. 241; E/CN. 5/351;
E/CN. 5/SR. 302-304

URBANIZATION

1. The following resolution proposed by Yugoslavia, Sudan, Argentina and Indonesia was passed unanimously by the Social Commission on Thursday, April 20, 1961: The Social Commission

a. Approves the proposals for concerted international action in the field of urbanization and the methods suggested for the implementation of the long-range programme (E/CN. 5/351, see paragraphs 3-8 of this abstract);

b. Invites the United Nations, including the regional economic commissions, and the specialized agencies concerned to strengthen their work on various aspects of urbanization and to make the necessary provisions for full participation in the concerted programme of international action in this field;

c. Recommends that Governments, in consulation as appropriate with the United Nations, including the regional economic commissions, and the specialized agencies concerned, consider designation existing, or establishing new, organizations as national centres with the following functions:

(i) to review and evaluate existing programmes in the fields having a bearing on urbanization in their respective geographical areas of operation;

(ii) to provide extension or advisory services to interested communities in connexion with surveys and programmes dealing with the different aspects of urbanization;

(iii) to train the technical and administrative personnel required for planning, organization and execution of programmes in this field;

(iv) to organize, undertake, or sponsor as required, research and surveys covering the different aspects of urbanization and their relationship to national, regional and local development;

(v) to recommend appropriate action programmes together with adequate methods for their co-ordination and financing at the municipal, regional and central levels;

(vi) to serve as clearing houses for information on practical experience, research and the results achieved in dealing with various aspects of urbanization, including new towns and industrial centres;

(vii) to make available to the United Nations, the regional economic commissions and the specialized agencies concerned, reports, studies and information on various aspects of urbanization in their respective areas of responsibility.

d. Recommends that these centres maintain liaison with other national and/or regional institutions already established or assisted by the United Nations and the specialized agencies operating in similar and connected fields;

e. Recommends further that special attention be given to the problems and needs of the developing and the newly independent countries in the field of urbanization and urban development.

2. The memorandum E/CN. 5/351 referred to in paragraph 1a consists of four parts:

a. Statement of the problems (paragraph 3 below)

b. General program of action (paragraph 4 and discussion by Julia Henderson, paragraphs 10-13)

c. Methods of implementation (paragraphs 5 and 6)

d. Specific inter-regional and regional activities (paragraphs 7 and 8)

3. PROPOSALS FOR CONCERTED INTERNATIONAL ACTION IN THE FIELD OF URBANIZATION (E/CN. 5/351)

Memorandum by the Secretary-General

It is recognized that problems of urbanization are now universal, even though their origins and the current needs and emphases may differ from one country to another. Subject to wide variations between countries, the following appear to be some of the major problems associated with rapid urbanization.

(a) Inadequate economic basis to support increasing urbanization. It has been noted that cities too often attract migrants from the country-side for whom they provide no suitable employment outlets. Conversely, the fact that available manpower is largely unskilled and unstable inhibits the industrial growth

which might provide additional employment opportunities. This situation, with its consequent disaffections, creates problems apparently due to urbanization, realistic solutions to which, however, must often be sought at the regional or national levels when municipalities alone cannot deal with conditions beyond their control.

(b) Lack of adequate community facilities, including physical facilities (such as water supply, sewage systems and transportation) and public and social services; difficulties and costs of expanding such facilities and services in rapidly growing urban areas. Although deficiencies in the distribution and quality of public services may be more acute at the out-skirts of the city and in other urban sectors where the migrant population is concentrating, the deterioration of community facilities as a consequence of rapid urban growth may affect the city as a whole.

(c) Inadequate administrative structure. This is evident in one or more of the following ways: the multiplicity of authorities within urban areas; lack of correspondence between the area served by the existing administrative machinery and the effective urban area; lack of co-operation and co-ordination among government units (national, provincial, municipal) and even among the agencies of the same unit of government; inadequacy of organization at neighbourhood and higher levels to mobilize governmental and non-governmental resources for the improvement of city life.

(d) Inadequacy (or lack) of plans and planning machinery. Where city planning machinery has been set up and a programme of action undertaken, their scope tends to be restricted to the city proper and, in many cases, to the physical aspects of planning, dealing with land use, traffic, urban renewal, etc. They do not embrace related questions of economic development, such as the provision of employment opportunities, or various social questions of urbanization. Nor is city planning usually integrated with regional or national development planning or programming, in the larger perspective of urban-rural relations.

(e) The difficulties of adaptation and transition to urban life of rural migrants, particularly when the cultural gap is wide between the rural and the urban milieus. Involved here are problems of employment, housing, living habits, food consumption and nutrition, family structure and stability, forms of association and social organization (to replace those of the rural community). These problems create a demand for services to orient and aid populations in transition.

4. It is proposed that, within the limits set by government requests and by staff and other resources, and with re-orientation of existing activities as appropriate, the programme of concerted action in urbanization should concentrate on strenghtening the following four main areas of activity, particularly in the context of development planning. It would be undertaken in full co-operation with the national and local authorities concerned and adapted in specific ways to their actual needs.

(a) Assistance to Governments in basic research and studies relating to urbanization: for example, urban case studies to define present conditions and emerging problems; analysis and projection of present trends in urbanization and their implications; studies of the costs of social overheads and social services, under various governmental policies, in relation to urbanization trends; analysis of urban social structure and its relation to economic and social development; studies of physical and psychological factors, peculiar to urban life and rapid urbanization, which affect health; studies of selection and location of industries, taking into account, inter alia, the urban employment situation.

(b) Assistance in city and regional planning, co-ordinated with national development plans, programmes or policies. The emphasis would be upon a comprehensive approach in which planning would be based on economic, social, administrative and physical considerations within a given region. Special attention would be given to rapidly-growing metropolitan areas and to the training of personnel required for the implementation of planning projects at the national, regional and local levels and at varying stages of technological development.

(c) Assistance in solving public administration problems in the field of urbanization. Development of new legal and administrative structure to meet the problems of urban expansion. Assistance in establishing institutions and administrative machinery for dealing with problems of relationship between central and local administrations, problems at the metropolitan level and the city district and peripheral district levels. Assistance with regard to municipal personnel, training and fiscal problems.

(d) Assistance in the organization and expansion of community services and civic participation. This would be concerned with co-ordinated expansion of basic public services, support of civic initiative for improvement of living conditions, and aid to in-migrants in adapting to conditions of urban life.

5. The main methods of carrying out the concerted programme in urbanization and of assisting Governments would be the following:

(a) Regional survey missions and seminars. This would ordinarily be a first step, preliminary to more specific assistance and would be aimed at promoting an awareness of the problems created by rapid urbanization, an exchange of experience on measures taken to deal with such problems and an understanding of the types of assistance that can be obtained from international organizations.

(b) Specific inquiries and intensive surveys, particularly as related to development planning at the national, regional, or local level.

(c) Pilot projects. These might be initiated, for example, in regard to the rehabilitation of shanty-towns; the organization of mutual help among urban groups or communities; urban community development and community organization; the resettlement of surplus urban labour; the decentralization of industries; the establishment of industrial estates; the development of new towns, satellite towns and "sub-centres" in metropolitan areas; the creation or development of centres ("service" villages or towns) aiming at bringing to the country-side some of the technical services and cultural and recreational facilities and attractions existing in cities.

(d) Advisory services. These would be provided for projects related to any of the four main areas of work outlined in paragraph 4 above.

(e) Fellowships would be co-ordinated to give national officials concerned with urban development in any of the specific areas of work an opportunity to attend seminars or to observe and study abroad projects and measures successfully taken to solve some of the problems involved in rapid urbanization.

(f) Orientation and co-ordination of existing international programmes. It would be desirable to avoid unnecessary complications in normal programmes or the establishment of any elaborate international or national machinery under the heading of "urbanization". At the same time, however, an effort should be made towards the launching of joint projects which it appears that the countries concerned would desire and benefit from such forms of concerted action.

6. Within the four main areas of activity suggested in paragraph 4 and in connexion with the methods discussed in paragraph 5 above, the actual projects to be included in the long-range programme would vary from one country or region to another. The following suggestions are made on an inter-regional and regional basis for the period 1961-1964:

7. Suggested Inter-regional Activities (These should be considered as examples.)

(a) Inter-agency meeting in 1963 and 1964 to consider the results and implications of the various national and regional seminars and studies. The meeting would prepare recommendations for subsequence activities in the field of urbanization beyond the period considered here.

(b) Review of experiences in physical, industrial and administrative decentralization in relation to urbanization.

(c) Initiation of a comparative study of the administrative aspects of urbanization on a world-wide basis. This would include identification of main problems and different approaches to their solution, taking into account of variations in setting.

(d) Following the recommendations of the regional planning seminar held in Tokyo in 1958 and the experience gained in city and regional planning projects under the United Nations technical assistance programme, organization in 1961 of an expert group meeting on metropolitan planning to formulate recommendations with respect to suitable approaches to physical planning problems of metropolitan areas based on economic, social and administrative considerations.

(e) Aid to Government of under-developed countries in analysing and utilizing results of national censuses to be taken in connexion with the 1960 World Population Census Programme, including studies of rural-urban migration and the growth and characteristics of urban populations, and applications of findings to problems of policy-making and planning relevant to urbanization. The proposed forms of aid include seminars and conferences, training projects, preparation of methodological manuals, aid to the development of national research institutions, regional research projects, and co-operation with individual Governments, upon request, in carrying out studies of the census results.

(f) Preparation of manuals on: methods of population projections for urban and rural segments of a country and for major cities; and fact-finding in urbanization studies.

8. Suggested Regional Activities.

(a) AFRICA

(i) Organization in 1962 of a workshop on urbanization in Africa co-sponsored by the United Nations (ECA, Public Administration Division, Bureau of Social Affairs and Industrial Development Division), ILO, FAO, UNESCO and WHO. Emphasis would be placed on the practical

policy aspects of rapid urbanization. In addition to social scientistis and international experts, the participants would be drawn from among government officials faced with practical problems of rapid urbanization. A small preparatory survey mission in 1961 would review local problems of urbanization, consult with government officials and make necessary preparations for the workshop and for other international activity in urbanization, as appropriate.

(ii) Initation of follow-up projects in one or more countries on the basis of the survey mission and workshop recommendations and of specific requests by the Government concerned.

(iii) Study of the relation between urban development and national economic and social planning.

(iv) Organization of a seminar on city and regional planning.

(v) Studies and pilot projects in urban community development.

b. ASIA AND THE FAR EAST. Taking into account the recommendations of the UN/UNESCO Seminar on Urbanization in the ECAFE region and of the United Nations Seminar on Regional Planning held in Tokyo in 1958, it is felt that international activities in this region may appropriated concentrate on the following types of assistance to individual countries:

(i) study of rural-urban migration, as part of a study of population growth in relation to economic development;

(ii) survey of means of financing programmes concerned with economic and social improvement of urban areas;

(iii) training of officials concerned with urbanization problems, in particular officials concerned with administration and planning in rapidly-growing urban areas;

(iv) assistance in drawing up comprehensive urban development plans in relation to national and regional development plans in selected cities of the region;

(v) assistance in promoting pilot projects and regional seminars in urban community development.

c. LATIN AMERICA. In the light of recommendations of the Seminars on Urbanization Problems in Latin America, the following activities are suggested for the period 1961-1964:

(i) household and family surveys in urban areas, to obtain a direct picture of family living conditions and provide a basis for the formulation of specific policy and action programmes;

(ii) development of demographic data on urbanization in relation to economic growth;

(iii) studies of social and administrative questions relating to the decentralization of industry and services in countries with exaggerated primate city growth;

(iv) pilot projects in community development and community organization in shanty-town districts;

(v) workshop and seminar on urban and regional planning.

d. MEDITERRANEAN AND MIDDLE EASTERN REGION. Taking account of the conclusions and recommendations of the Survey Mission on Urbanization in the Mediterranean region, the following projects are considered appropriate for carrying out during the period 1961-64:

(i) pilot projects in organization and rehabilitation of urban districts;

(ii) assistance in comprehensive economic, social and physical planning for selected urban agglomerations;

(iii) surveys relating to the question of rural-urban balance in the context of regional development within countries;

(iv) assistance in the planning and development of expanding and new towns;

(v) intensive studies in Athens and Cairo to determine migratory movements on the basis of sample surveys, and to obtain by sub-samples thereof information on the problems of adaptation to new conditions of life.

e. EUROPE. In view of the fact that the recent studies undertaken under the auspices of the Economic Commission for Europe (and by its Housing Committee in particular) and of the European Social Welfare Programme have shown the importance of the problems connected with metropolitan areas, the following project is now under consideration: organization in 1962 of a seminar on urban development policy and planning dealing with the physical, administrative, economic and social aspects and implications.

SOCIAL COMMISSION - THIRTEENTH SESSION

(E/CN. 5/SR. 302-304)

9. The Memorandum above was discussed at the Social Commissions 13th meeting in New York, April 17-20. Abstracts from this discussion follow. Eighteen member nations made up the social commissions' thirteenth session: Albania, Australia, Brazil, Canada, China, Ecuador, Finland, France, Indonesia, Israel, Italy, Suday, Union of Soviet Socialist Republics, United Arab Republic, United Kingdom of Great Britain and Northern Ireland, United States of America, Uruguay, and Yugoslavia. In addition representatives from the following specialized agencies took part: International Labour Organisation; Food and Agriculture Organization; UNESCO; World Health Organization.

10. Miss HENDERSON (Director, Bureau of Social Affairs): The first point of the programme (paragraph 4 (a), the offer of assistance to Governments in basic research and studies relating to urbanization, was not a way of postponing the solution of the problem. Although the Secretariat had undertaken many global and regional studies, Governments still required more precise data on which to base their urbanization policies and programmes. Thus the study of sarifa dwellers around Baghdad undertaken by the Iraqui Ministry of Social Affairs with the assistance of a United Nations expert had provided detailed information which had paved the way for a whole series of measures to help those people improve their levels of living. There were many possible studies and those mentioned should be regarded only as a list from which Governments could select the items that interested them most. The Secretariat felt that it could provide practical assistance in analysing the demographic aspects of the problem in making surveys of the level of living of the urban population and studies relating to the selection and location of industries, family adjustment, social disorganization, crime and delinquency, and in dealing with questions related to national planning or "rural-urban balance". UNESCO and other specialized agencies were also willing to participate in such work.

11. The United Nations had already provided considerable assistance in city and regional planning, the second point on the programme; twelve to fifteen countries were now receiving such assistance. In recent years, the United Nations efforts in that field had been directed to ensuring that physical planning was accompanied by and co-ordinated with the economic and social planning of the whole region, as well as helping countries create their own planning institutions and training town planners.

12. The third point, assistance in solving public administration problems in the field of urbanization, was fundamental to national and international action in the whole field of urbanization. So far, few Governments had asked the United Nations for aid in improving their administrative structures at the municipal or metropolitan levels. The Public Administration

Division and other professional bodies were ready to help with the organization and training of municipal personnel.

13. A last point, assistance in the organization and expansion of community services and civic participation, was of particular interest to the Commission, the Bureau of Social Affairs, WHO, UNESCO and many voluntary organizations. The extension of public health services, schools, housing and social welfare services to migrants living in shanty towns was one of the most pressing problems of the day. No country possessed sufficient financial resources or enough trained personnel to cope with the problem adequately. Although, in the end, reliance must be placed on the will of the citizens themselves to improve their own lot, the United Nations and the specialized agencies could help, not only with the training of personnel, but with the organization of citizens' groups, adult aducation work and in many other ways.

14. Mr. BERTRAND (UNESCO): said he wished to draw the Commission's attention to what seemed to be UNESCO's specific contribution to the problems under discussion, and to explain the originality and usefulness of that contribution. If there was any field where it was necessary to have recourse, in a disinterested, objective and thorough manner, to the most modern and well-tried techniques of research offered by the different social sciences, the field was urbanization. Although urbanization was a world-wide problem it appeared in very different forms; the causes were many, the structure and the economic level of the new urban strata varied considerably, and the drives motivating migrants were not always the same. It would not therefore be logical to try to deal with the dangers of the process without having first accurately determined its characteristics. UNESCO had an essential part to play in that respect, and while he did not propose to go into detail about the programme approved by UNESCO for 1961-62, he wished to give a brief outline of some parts of it. First, UNESCO was to prepare a manual called Fact Finding in Urbanization Studies, which was intended as a guide to sociological research methods applied to urbanization. It was to be hoped that the manual, which was to be published in 1963, would be of use to all those who at all levels and within a national or regional framework, were concerned with the problems of urbanization. Secondly, UNESCO intended to continue its research and surveys aimed at providing a satisfactory scientific basis for its future activities in such areas as Africa, the Mediterranean and the South Pacific.

15. In conclusion, he recalled that a United Nations/UNESCO seminar on problems of new and rapidly growing towns in Southern Asia had been held in 1960 at New Delhi. Attention had been given there to the problem of the role of firms in strictly industrial matters and their possible responsibilities in connexion with the improvement of urban social services. The proceedings of the seminar would be published by UNESCO.

16. Mr. ALVAREZ-ALLEMEGO (Uruguay) said that the solution of the problem of urbanization was essential to that of many other social and economic problems. The capacity of a population to absorb economic development and raise its levels of living depended ultimately on the strength of the family unit, and it was impossible to bring up a family decently in bad housing conditions.

17. As regards practical measures, he agreed with the Director of the Bureau of Social Affairs that no special machinery should be set up to deal with the problem of urbanization. It was so complex and involved so many other matters that no single body could deal with it entirely.

18. Mr. EL BAKRI (Sudan) said that both the highly developed and the under-developed countries seemed to be facing much the same problems in the field of urbanization. The evils associated with the modern metropolis were, first, poor living conditions and, secondly, social problems such as demoralization of the inhabitants, broken families, unstable employment and criminality. The latter group of evils was common to both types of countries, but not the former. In Africa, where the full impact of industrialization had not yet been felt, living conditions were, on the whole, better in the towns than in the rural areas.

19. The practical problems faced by the developed and the under-developed countries in the field of urbanization were also different. The major difficulties were adequate outlined in paragraph 3 of the report, but no mention was made of the transport and communications problem, which was a constant factor of the spread of built-up areas in Africa.

20. In Africa, there were grounds for thinking that the problems of urban development reflected a special set of conditions and that a new type of regional planning was required to maintain a proper balance between social and economic policy and physical development, thus laying a sound basis for future urban expansion. The main points of such planning might be as follows: first, the resettlement of the nomads, who would become economically productive members of a settled community; secondly, the provision of facilities for migrants and workers who spent part of the year in the towns and part in rural areas; thirdly, the transfer of population from some urban or semi-urban centres to new areas; and fourthly, the grouping of a number of villages to form suburban centres, for which regional planning was a prerequisite.

21. Mrs. TOMSIC (Yugoslavia) observed that urbanization was a natural process resulting from the movement of people into the towns to seek a better life, in the wake of the century's scientific and technological advances. However, the process had its negative aspects, and it was the Commission's task to ascertain their causes. Those causes, her delegation believed, were primarily economic, and the Commission had been wrong in dissociating itself from United Nations bodies dealing essentially with

economic matters. The problems of urbanization should be considered in the context of over-all growth in a given area, for in effect, the phenomena of urbanization were the expression of economic and social development while, conversely, a policy of urbanization could vitally affect the rate of that development. It was important, therefore, to seek, through the United Nations, ways and means of co-ordinating not only social but also economic action in that field. It was essential, however, to try to eliminate the causes and not merely to counteract the consequences of the phenomena of urbanization. Merely palliative measures, such as the provision of urban populations with increased health, education, housing and other facilities, might actually aggravate the situation by drawing yet larger numbers of people into the cities. The experience both of the developed and of the under-developed countries clearly showed that those problems could not be solved in the cities alone. Measures must of necessity be extended to rural areas too, where the first need was to modernize agriculture both in the technical and social sense. The role of national and local governments in the solving of social problems should therefore be stressed, and it should also be recognized that the deterioration of the cities could not be prevented unless both the State and the community played a large part in the planning of economic development and, at the same time, in the balancing of economic and social development. In her delegation's view a Government's policy in the field of urbanization was closely linked with its policy in the matter of the distribution of productive forces and the location of new productive capacities, and also with its policy regarding investment in agriculture. Within the framework of economic planning, provision should be made for investment in education, health, housing and so on, for they were essential to economic progress.

22. Her Government believed that to help Governments to play a greater part in urbanization it would be useful to establish national centres of urban development in order to organize and undertake research and reconnaissance surveys covering the current aspects of urbanization, to review existing programmes, to train local technical and administrative personnel for planning, organization and execution of programmes and to serve as a clearing-house for information on practical experience with urbanization. The work of such centres could be of great value to Governments, and to the Commission itself, in the preparation of long-term programmes, and it would therefore be very desirable if the United Nations, in consultation with the regional economic commissions and the specialized agencies concerned, could help interested Governments to establish such centres. While she did not think that it was necessary to set up new international machinery, she would be glad, if the idea seemed acceptable in principle, to submit to the Commission a resolution for action along the lines she had suggested.

Compiled from Athens Technological Institute Graduate School of Ekistics Bulletin 1960-61; Graduate Studies in Municipal Planning, Universidad Del Valle, School of Architecture, Department of City Planning, Cali, Colombia, S.A.; Report of Progress 1959, Division of Regional and City Planning, Bandung Institute of Technology; unpublished papers of W. Doebele, Jr.; United Nations TAO/GHA/6.

NEW SCHOOLS OF PLANNING AND EKISTICS

1. The need for trained planners or ekisticians to cope with the gathering momentum of urbanization and industrialization throughout the world has been noted in five different countries -- Greece, Indonesia, Ghana, Venezuela, and Colombia -- each have recently created curriculums to cope with such education. While all five have similar ends in view, their methods of training and concepts of education are different. EKISTICS will present the schools in Greece, Indonesia and Colombia in some detail. The program in Ghana is still in the period of formation and only the idea behind it will be presented. On the other hand, for the Venezuelan program only the curriculum and desired faculty is accessible to for presentation in this issue.

2. The Idea of the Schools. The Graduate School of Ekistics and Department of City Planning at Cali both offer two-year graduate programs. Bandung's purpose is to offer planning as an undergraduate specialization, with sufficient intensity to result in a professional degree after a four-and-one-half year program, The Institute of Community Planning in Ghana will after two-year technical course for graduates of secondary schools.

3. The Cali Department of City Planning's functions and responsibilities at its current stage can be described as follows:

a. Instruction in city planning to college graduates with majors in architecture, landscape architecture, engineering, sociology, anthropology, economics, law, public administration and public health.

b. Research oriented towards the development of city planning methodologies and techniques applicable to local conditions and in general to those existing in other Latin American countries.

c. Professional consulting services in planning to various public and private agencies, especially to municipalities of the Cauca Valley region.

d. Activities leading towards:

(1) Informing the public at large on the objectives of a field such as city planning, of the advantages inherent in its application to governmental activities having to do with city development, and of the benefits to be derived from the process by the citizens in general.

(2) Promotion of citizen participation in the planning process, especially at the municipal and regional levels.

4. The purpose of the program in the Graduate School of Ekistics is to prepare qualified candidates for the growing number of positions in ekistic practice, teaching, administration, and research, requiring advanced levels of professional competence. The program is based on the assumption that ekistics is concerned with a spectrum of functions and serves rather than any narrow definition of function. Ekistics is concerned with all aspect of the life and growth of human settlements. It studies and analyzes their problems, its aim being to further coordinated future development through dynamic planning and programming.

5. Ekistics, while recognizing the importance of the economic, social, geographic, physical, and political aspects, regards the human settlement as a well defined entity in its own right, as a conceptual unit that requires a new unified approach, if it is to be correctly understood and appreciated. For this reason, it brings together all the specialized approaches, attempting coordination of the individual points of view, but a new professional approach in ekistics emerging from the scientific integration of these components into a universally indentifiable and applicable process. It is this process, along with its professional ethics that characterizes ekistics as a discipline.

6. The ekistic process is realized through a highly selective choice of information from various fields. This selectivity is possible only because the central focus, the comprehensive development of human settlements, is constantly maintained. This enables the ekistician to incorporate knowledge from other disciplines in developing a completely separate and distinct understanding of human settlements. As the work in ekistics grows, the body of ekistic knowledge increases, bringing closer and closer attention to the problems underlying development. With the application of this knowledge, ekistic in origin and growth, it is now possible to fulfill a characteristic need of our era and provide for the dynamic development of communities, allowing for the balanced interrelation of all the diverse elements

7. In addition, the faculty of the Graduate School of Ekistics is undertaking several research projects financed by the Ford and Rockefeller

Foundations. These include"The City of the Future", "The Human Community" and the "Economic Development of Greece."

8. The education at Bandung is to train students in both the technological and policy-making aspects of spatial planning at the national, provincial, and local levels. The emphasis on regional development, its attention to effectuation and implementation, and its program to produce teaching materials have been specifically designed to help it give effective service to the Southeast Asia region.

9. The following constitute the specific responsibilities of the Institute for Community Planning in Ghana during an initial period of three to five years. At that point these responsibilities ought to be reviewed in the light of experience:

(a) The organization and execution of a training programme for local planning assistants: Initially their terms of reference spoke of "planning and development assistants"; after considerable discussion, and based on examination of related job responsibilities in other government departments, it is proposed to describe the trainees of the Institute as local planning assistants. This provides a simple title with an emphasis upon their essentially local responsibilities. The programme will offer comprehensive instruction in all relevant social, economic and physical aspects of community planning. The emphasis will be on acquainting the students with a wide variety of methods, techniques and sources of data in fields related to community planning, and on training them in the specific skill of land use planning and development layout. Students must be helped to develop an ability of judgement and an ability to make informed decisions, bearing in mind the comprehensive nature of planning land use and resources for every human purpose.

(b) Closely linked with the training programme for local planning assistants, the Institute should develop meaningful and practical teaching aids for planning education generally.

(c) The Institute will also be responsible for the organization and running of at least three kinds of short courses, after it has been launched upon its major purpose.

(i) Orientation courses for related technicians, eg., building inspectors, mass education assistants and other junior central and local government officials. These courses should last three to four years.

(ii) Specialized courses dealing with specific and detailed planning and development problems, eg., village improvement work or village housing.

(iii) Refresher courses for junior staff in the Department of town and Country Planning.

10. Creation of the Schools. It is notable that the inception of the schools in Colombia, Greece and Indonesia took place in 1958 and 1959 while the schools in Ghana and Venezuela are of more recent origin. The Graduate School of Ekistics and the Department of City Planning at Cali are now both relatively well established with faculty and a program of courses which will be reviewed. The schools at Bandung and in Venezuela are still in the process of formation and the best picture is obtained from a review of proposed faculty.

11. Graduate School of Ekistics. The Graduate School of Ekistics was founded in 1958 as part of the Athens Technological Institute (ATI), a non-profit educational research institution located in Athens, Greece. During the first year the emphasis is upon seminars and corresponding workshops, and also field work placement generally with the Athens Office of Doxiadis Associates, which is affiliated with the school. This enables trainees to participate in the on-going ekistic process related to the different cultures and economics currently under study. In the second year, the program provides for field work placement in countries with ATI-DA offices and a less intensive continuation of theoretical study. The program terminates by a general examination and a thesis which are both reviewed by faculty members from Athens.

12. The students are required to take each of the following seminars, in addition to field work and a thesis:

a. Administration - 6 months. Its scope includes analysis of agency structure and functions: identification and analysis of the role of the administrator, techniques of organization and coordination of ekistic agencies and programs, utilization of resources and work with community and governmental agencies: analysis of administrative processes and their application.

b. Architecture - 9 months. This seminar aims at developing an understanding of the basic principles of architecture as related to ekistic theory and practice. The purpose is to make the ekistician aware of the nature of problems in architecture and the techniques used in facing them and further, to familiarize him with the approaches in this field that are based upon the determination of functional requirements which must be served and expressed by appropriate forms and structures. Treatment of historic-traditional and contemporary architecture is focused on the fundamentals of planning and composition, as conditioned by the user, his environment and the changing background of this life. The practical implications of the solutions adopted are also examined, whereas the architectural techniques and practices are merely outlined.

COMPARISON OF STAFFS OR CURRICULUM

	Athens - ATI % of course	Bandung % of faculty	Cali % of Course	Venezuela % of Faculty
Planning - Ekistics	25	25	22	25
Sociology - Demography	15	13	6	20
Economics & Industrial Location	10	6	10	18
Statistics & Research	12	6	6	4
Geography	10	13	6	7
Community Facilities & Transportation	5	12	14	11
Housing			6	4
Public Administration	5	6	12	7
Law	5	6	4	4
Architecture and Design	10	6	6	
Landscape Architecture		6		
History	3		8	
	100	99	100	100
	Design Emphasis	Regional Emphasis	Administration and Community Development Emphasis	Socio-economic Emphasis

c. Economics. - 12 months. The purpose is to relate the economic factors most important in the life and growth of a settlement and its hinterland to the present structure and future form of that settlement. The economic position of settlements with respect to their regions and in the national economy is discussed in an effort to illustrate the interrelated nature of the national and local economic systems. The understanding of the dynamic nature of settlements requires cognizance of the nature of economic activity and the factors determining its location in space.

d. Ekistics - 12 months. The aim is to develop in the student the theoretical basis as well as the approach used in the coordinated development of human settlements. Ekistic phenomena and their dynamics are analyzed and their components identified. Particular emphasis is placed on the influence of the total environment on the structure and functioning of settlements.

e. Ekistic Process - 15 months. The purpose is to enable the student to apply ekistic theory and to develop in him the necessary skills and techniques for preparing ekistic development programs at all levels. The work procedures are outlined in a coordinate use of ekistic knowledge form all other seminars. An effort is made to integrate the different systems of analysis contributed by the various fields into the unified ekistic approach.

f. Geography - 12 months. This is broken down into the studies of physical, economic and urban geography, and focus on the regional approach, drawing a close relationship to ekistic principles.

g. History of Civilization - 3 months. Particular emphasis is placed on basic principles underlying the evolution of philosophical concepts and art, reflecting ideas and attitudes toward life, and the way these attitudes are expressed in ekistics.

h. Public Law in the Ekistic Process. - 6 months. This seminar aims at identifying the legal aspects and the required practices which are related to ekistic development.

i. Research and Statistics - 12 months. In the course of this seminar, the basic assumptions underlying research theory, methodology, design, sampling, interpretation and presentation of data are examined in an analysis of the research process. In view of the importance of statistics as a tool in research practice, an appropriate part of the seminar is devoted to identification of basic concepts and development of methods and techniques for quantitative analysis.

j. Social Ekistics - 15 months. The seminar focuses first on basic psycho-social principles and frames of reference for planning and developing a well-balanced, healthy community

in which the individual and his total life are recognized as the central, fundamental values. Emphasis is then places on principles of social organization, social stratification, demographic analysis, community development and organization. Finally, the seminar concentrates attention on the task of providing for social planning in connection with completely new communities, with urban renewal efforts, and with redevelopment.

k. Urban Engineering. - 6 months. This seminar is designed to give a picture of the methods and techniques involved in creating a comprehensive system of public utilities and facilities for ekistic projects. Special attention is given to the problems connected with population growth and urban expansion and the accompanying engineering needs. The adjustment of standard engineering techniques and the development of new methods for use in non-industrial settings are also generally discussed, as are the problems of developing local skills and the use of local materials. Layout, construction, cost, and priority, and plans are reviewed.

13. Department of City Planning, Universidad del Valle Cali. In August 1958 a Department of City Planning was established within the university's school of Architecture. Simultaneously, a program was worked out for the gradual establishment of a city planning center in the University. Such a center, providing graduate instruction, will begin in September 1961. The department has been receiving technical assistance from the Department of City Planning of the University of Pennsylvania in the programming and contents of its courses of instruction, and steps have already been taken to extend this technical assistance to the use of textbooks and bibliographies, counselling on the Department's research programs, the utilization of library and teaching materials, and the interchange of students.

14. The following courses are required plus one summer of internship practice between the two years:

a. The Theory of Planning. 1st Semester. The historical background of planning as a discipline. Political and economic doctrines regarding planning. Objectives, principles and procedures in planning.

b. Planning Analysis. 1st and 2nd Semesters. Basic methodology for the guantituative compilation and analysis of social, economic and physical data. Introduction to statistics and to different systems of symbolic representation. The decision making process at the private and public levels and its influence on community development.

c. The Legal Basis for Planning. 1st Semester. The planning function and its constitutional bases at the numicipal, metropolitan, state, regional, and national levels. The organization for planning

Coordination for planning. Coordination of the developmental policies at different administrative levels. Comparative planning legislation.

d. Municipal Planning Administration. 2nd, 3rd, and 4th Semesters. Different forms of local government. Legislative, administrative, and technical aspects of general and specific plans for municipal and metropolitan development. Organization and elaboration of plans and their presentation as legal text and reports. Application and control of plans for municipal development. The fiscal aspects of municipal development. The programing and financing of public works and services. Taxes and other fiscal resources. The budget.

e. Problems in Municipal Planning. 2nd, 3rd and 4th Semesters. Individual and group laboratory projects dealing mainly with research, analysis, design and preparation of special reports on complex planning cases. It includes problems on the development of urban areas, new cities, and urban renewal, and touching on their physical, economic, social and administrative aspects.

f. Regional Planning and Development. 4th Semester. The principles, methodology and organizational aspects of regional and state planning. The relations of the region and its urban centres. Problems in the conservation and development of natural resources. Production, consumption, technological change, and other factors affecting the spatial-economy and the region. Public and community services at the regional level.

g. Natural Resources. 3rd Semester. Understanding the physical base of urban and rural communities. The role of the natural resources and of the physical base in the location and distribution of population and the resulting forms, land uses, densities, and demographic growth. Land, water, and other needs of urban land uses and their relation to agricultural, recreational, and industrial land.

h. Urban Sociology. 1st Semester, Nature, causes, and effects of the progressive urbanization of the world, with emphasis on countries and regions with an unbalanced development. Social and demographic characteristics of urban populations. Exploration of the technological and social factors determining the ecology and the planning of urban areas with its concomitant problems in the location and distribution of populations.

i. The Methodology of Research. 1st Semester. Research methods and techniques in economics and the other social sciences. Methods, problems, and techniques of report writing, according to the subject matter.

j. Introduction to Design. 1st Semester. Introduction to design techniques, surveying, and the ways and means of urban and regional design.

k. Urban Economics. 1st Semester. Introduction to design techniques, surveying, and the ways and means of urban and regional design.

l. Community Services. 2nd Semester. The planning and the administration of educational, recreational, and other services of urban and rural areas.

m. Urban Transportation. 3rd Semester. The movement of goods and people in relation to urban and rural land uses. The methodology of transportation analysis and planning.

n. The History of Urban Development. 3rd Semester. Focuses on the study of urban forms and urban design through the analysis of different communities in time and space, with emphasis on the physical forms in their relation to the cultural and political life of each historical period.

o. Housing. 4th Semester. Advanced studies on the problem of housing design, production, urbanization, financing, programming, administration, control and its market.

p. Municipal Engineering. 4th Semester. An elementary course dealing with planning for community facilities.

15. Bandung School on Regional and City Planning. The Bandung school in regional and city planning is an outgrowth of the United Nations scheme to institute such a school in Southeast Asia. The Department of City and Regional Planning of the Harvard Graduate School of Design was accepted by the Government of Indonesia as a suitable institution to see the new school onto its feet. It is doing so by sending resident advisors to the school from its faculty, offering the advice and counsel of senior members of its faculty on all phases of the project, exchanging bibliographic, library and teaching materials and similar academic and pedogogic assistance, exchanging students and/or faculty as may seem feasible, and generally supporting the new school in whatever ways possible within its own budget and basic responsibilities to its own students.

16. From the outset in 1959, the selection and training of the strongest possible faculty was given the maximum priority of attention. The basic plan involves two major elements:

a. to recruit from within Indonesia and elsewhere the strongest possible temporary faculty to teach for the first two-four years.

b. to recruit from current college graduates in Indonesia a group of approximately a dozen young men of exceptional intellectual and personal promise for specific training abroad in all of the important fields related to planning in a developing country, who will form the permanent faculty of the school.

17. The basic plan was to select some 13-15 outstanding college graduates in 11-13 disciplines. These are being sent for advanced training for the M.A., or, in some cases, the PhD. level, in outstanding universities abroad. Specifically, the following categories were determined.

a. City and Regional Planning - 3 people. Mr. Waworoento, a graduate of Colombia School of City and Regional Planning is already on the faculty, two others are taking the MCP program at Harvard.

b. Urban Design. An outstanding graduate of the Architecture Department of Bandung Institute will complete his Master's Degree in Civic Design at the University of Liverpool in June, 1961.

c. Space Economics and Location Analysis. A graduate in economics is presently enrolled in the Department of Regional Science at the University of Pennsylvania and may go to the PhD level.

d. Long-range Rural Planning. A graduate of the leading agricultural college in Indonesia is currently at Cornell in a combined program supervised by the planning and agriculture departments.

e. Transportation Planning. A graduate engineer is presently at the Institute of Traffic and Transportation Engineering, University of California.

f. Geography. A graduate student is presently in the Geography Department of the University of Toronto.

g. Aerial Photo Preparation and Interpretation and Cartography. A graduate student recently returned to the school after studying at the University of British Colombia.

h. Legal Implementation of Planning. A graduate engineer with considerable experience working with Indonesian land tenure system will begin a period of special studies at Harvard Law School in September, 1961, including courses at the School of Public Administration and Department of City and Regional Planning.

i. Public Finance and Administration. Candidate not yet approved.

j. Social Anthropology. Candidate not yet approved.

k. Sociology and Demography. Candidate not yet approved.

l. Municipal Engineering. A graduate student of chemical engineering will take a special course at the University of Durham.

m. Landscape Architecture. Candidate not yet approved.

n. Statistics. Staff available.

18. A New Planning School in Caracas, Venezuela. The fulltime teaching faculty will be made up in the following fields: economics -1, sociology -1, physical planning -1, geography and natural resources, public administration, plus four who are planners with a broad enough background to co-ordinate the various disciplines. In addition, they contemplate a number of part-time faculty members in specialized related fields such as economic programming, demography, transportation, housing.

Abstracted from "The Japan Architect"
October 1960. Pages 13-39.

A BUILDING AND A PROJECT

ON THE KURASHIKI CITY HALL AND A PROJECT AT M. I. T.

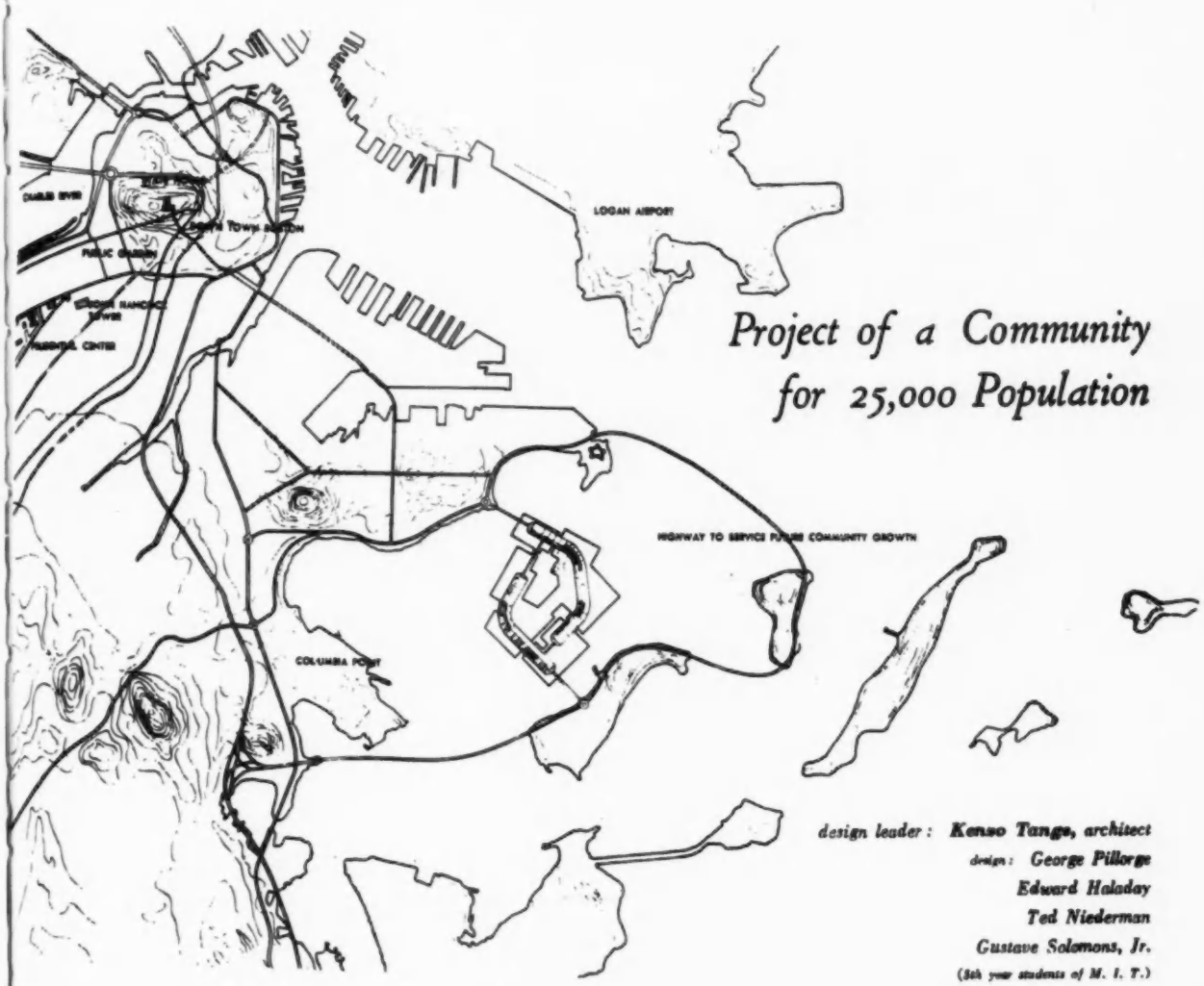
Kenzo Tange

1. In a city of the size of Kurashiki a new city hall can determine the direction of future growth, not merely for a short cycle, but for a long one. The city hall faces a citizen's square that is soon to be completed, and the installation as a whole was designed to have what I call a mass-human scale. In my opinion, this scale is manifested by the structure of the building. From the point of view of time, individual buildings are composed of a number of elements; some change in short cycles, other in long ones. Those that have long cycles are the ones that determine its character. With that in mind I chose a structure of steel and concrete, which stresses the fact that this is a contemporary building. Other materials -- those which have been commercialized and which under the name of "factory-produced materials" are changing in shorter and shorter cycles -- reveal dates, because each year's model is different, but they do not give the building the stamp of its period.

2. It was, however, no simple matter to associate this scale with the level of individual human scale. Consequently, we thought of a minor structure of precast concrete block and after many trials composed a single form and space. I regret that we were unable here to develop the full structural meaning of this minor structure. If also it does not satisfy the full requirements of the human scale, it is because we wished, by establishing an order of scale sequences, to consider the organization of spatial flow from the plaza to the city hall and into the interior and, in a large sense, the hierarchy of urban space; that is to say of the space including the city hall, the plaza, and the surrounding houses. This type of thought is, I think, even clearer in the M. I. T. projects introduced below.

3. The problem at M. I. T. for the fifth year architectural students was to design a community for 25,000 people, which, for hypothetical purposes, was to be located on an island in the bay of Boston.

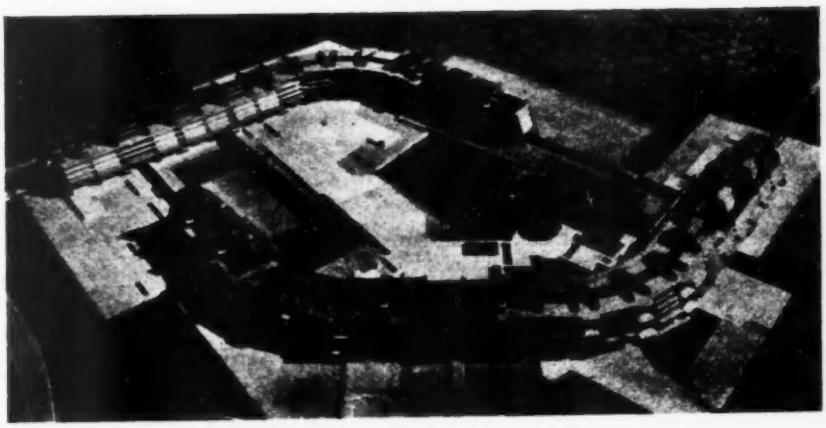
4. When we approach the problem of a high intensity of community life or of methods of linking the various functions of the city, modern means of transportation introduce new possibilities. The highway is beginning to establish a new system of association, both visually and functionally, but the superhuman scale involved in a highway system lacks unity with existing architectural forms. This does not mean, of course, that the superhuman scale is therefore to be denied. Instead, we must consider an order which will link it with the human scale.



Project of a Community for 25,000 Population

design leader: **Kenzo Tange,** *architect*

design: *George Pillorge*
Edward Haladay
Ted Niederman
Gustave Solomons, Jr.
(5th year students of M. I. T.)



5. Whereas the total system in cities is being defined by huge construction work of long cycle, such as highways, the dwelling unit is changing on a short cycle, and factory-produced elements on a still shorter one.

6. Several questions occur.

a. Can architecture not constitute a long-cycle structure which can define the system?

b. With factory-produced elements, cannot houses which would be suitable to a shorter cycle be constructed?

c. Is it not possible to find an order which will associate the two?

d. Cannot one conceive a major structure and a minor structure which, like the trunk and leaves of a tree, are linked, but which change according to different cycles?

e. Can the major structure not have the same possiblity for growth as a tree trunk?

7. A team of George Pillorge, Edward Haladay, Ted Niederman and Gustave Solomons prepared the plan pictured. The two structures forming the residential environment for the community have stable triangular sections. Within these major structures streets branch off from the main highways, and monorail is provided for mass transportation. There are areas for parking and elevators for vertical movement, and urban facilities are included.

8. Within the triangular structures there are at various levels open spaces which serve as community cores. Within them there are schools, churches and shopping districts. At every third level there are sidewalks for pedestrians, and along these there are rows of individual houses. The structure is to be thought of as man-made nature rather than manmade land, or as land improved upon.

9. This structure has an urban scale, and at the same time it satisfies the demands of an entire period of time. The over-all arrangement creates a basic form of human environment which copes with modern technology. This space organization is expressing the hierarchy which consists of several levels of scale: the scale of nature itself, superhuman scale which is developing by technology, the mass-human scale which is created by human activities in mass and, ultimately, the human scale involved in the everyday living of individuals.

COMMENTS ON THE PROJECT FOR BOSTON BAY

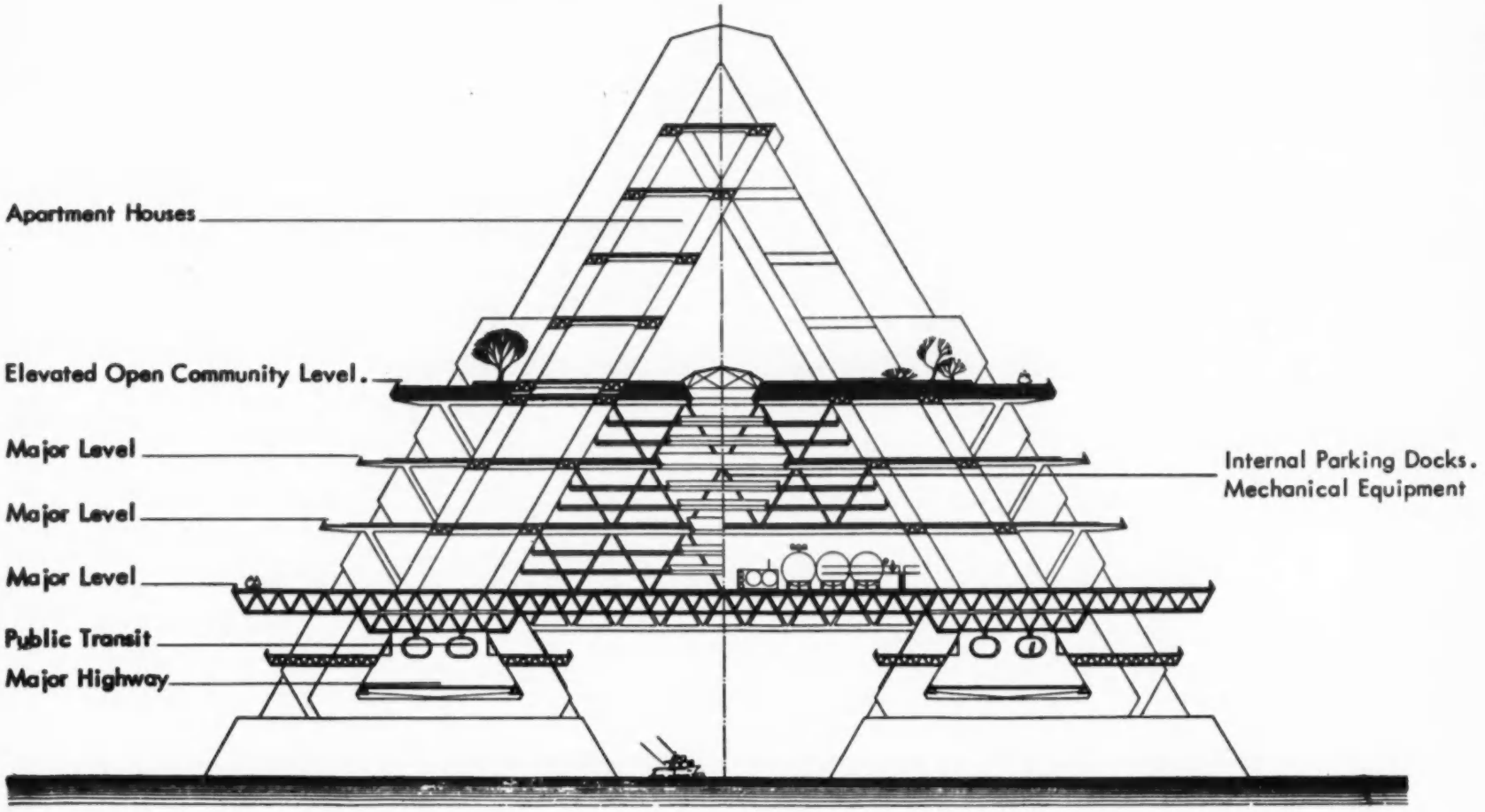
George Pillorge

1. The most long-lived elements of a community or a city tend to be the street pattern and the piped services which are usually tied in with transportation routes. The most short-lived elements are the individual houses, most of which change from generation to generation.

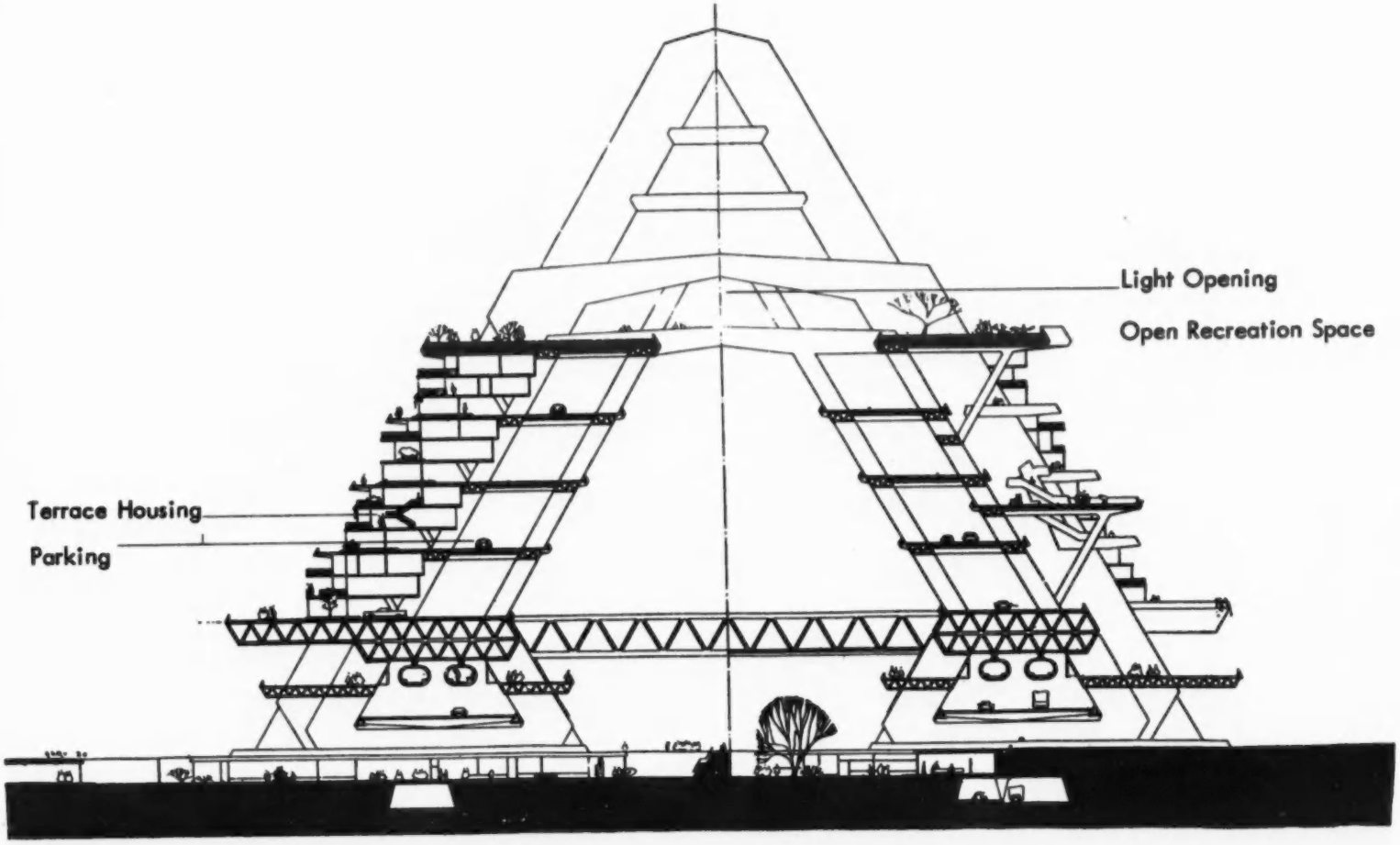
2. Accepting this state of affairs, the project attempted to create a more or less permanent structure to meet all transportation and mechanical service requirements. Thus, the major long-life structure of the community was built to the scale of the machine, allowing the houses, shops etc. to be attached to it.

3. This was done by the creation of platforms on which the smaller human scale elements (houses, shops, parks etc.) can be disposed at will, and altered at will, giving opportunities for infinite variety at the pedestrian scale. For instance, at each point where the elevators meet horizontal pedestrian paths there is an area where the street corner shop or meeting place might possibly be put.

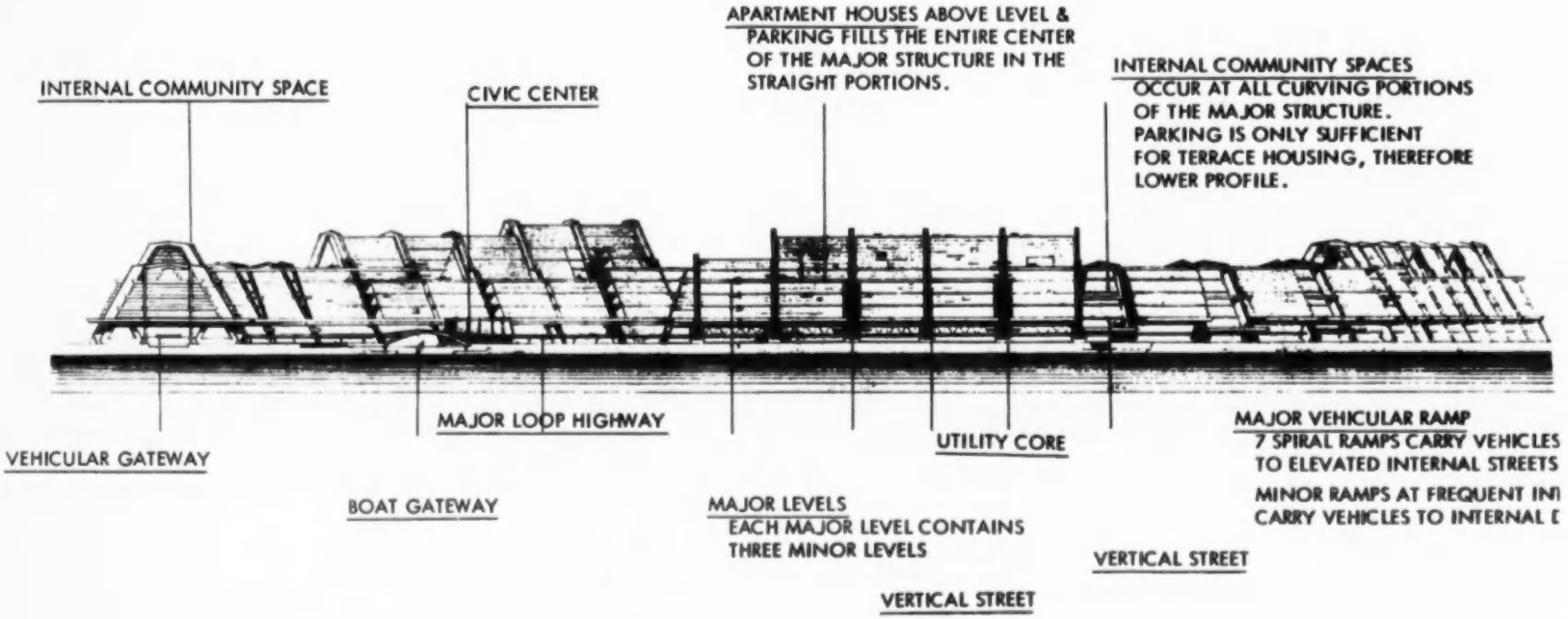
4. The whole concept is somewhat analagous to the structure of a tree. Its form is established by the trunk and branches but leaves, flowers and fruit come and go with the seasons.



TYPICAL SECTION THROUGH MAJOR STRUCTURE



SECTION THROUGH COMMUNITY OPEN SPACE


APARTMENT HOUSES ABOVE LEVEL & PARKING FILLS THE ENTIRE CENTER OF THE MAJOR STRUCTURE IN THE STRAIGHT PORTIONS.
INTERNAL COMMUNITY SPACES OCCUR AT ALL CURVING PORTIONS OF THE MAJOR STRUCTURE. PARKING IS ONLY SUFFICIENT FOR TERRACE HOUSING, THEREFORE LOWER PROFILE.
INTERNAL COMMUNITY SPACE
CIVIC CENTER
MAJOR LOOP HIGHWAY
UTILITY CORE
MAJOR VEHICULAR RAMP
7 SPIRAL RAMPS CARRY VEHICLES TO ELEVATED INTERNAL STREETS
MINOR RAMPS AT FREQUENT INT
CARRY VEHICLES TO INTERNAL
VEHICULAR GATEWAY
BOAT GATEWAY
MAJOR LEVELS
EACH MAJOR LEVEL CONTAINS THREE MINOR LEVELS
VERTICAL STREET
VERTICAL STREET

Abstracted from "Hong Kong Housing Authority Annual Report 1959-1960" Printed. 54 pages.

HOUSING ESTATES IN HONG KONG

J. M. Fraser

1. The estimated total population of the Colony at the end of 1959 was 2,919,000 persons, of whom approximately 80% were living in the urban areas of Hong Kong, Kowloon, and New Kowloon. At the same date the taxable domestic accommodation in these urban areas consisted of 131,644 dwellings (38 persons/d.u.). 53.63% of these dwellings were of post-war construction, an increase of 8.26% over the previous year. 11,544 new premises were erected during the year, but 1,506 old buildings were demolished.

2. J.M. Fraser, Commissioner for Housing, is realistic about the situation. He states that to make the best use of the few sites available in the urban area, only multi-storied blocks of flats have so far been built -- or are planned by the Development Housing Authority. Nobody pretends this is an ideal form of dwelling, but there is no practical alternative. With building sites so scarce, densities of 1,500 or more to the acre are common place in Hong Kong. No doubt such standards are regarded with horror by European or American housing organizations, but the Authority is proving that good housing can be provided at such high densities.

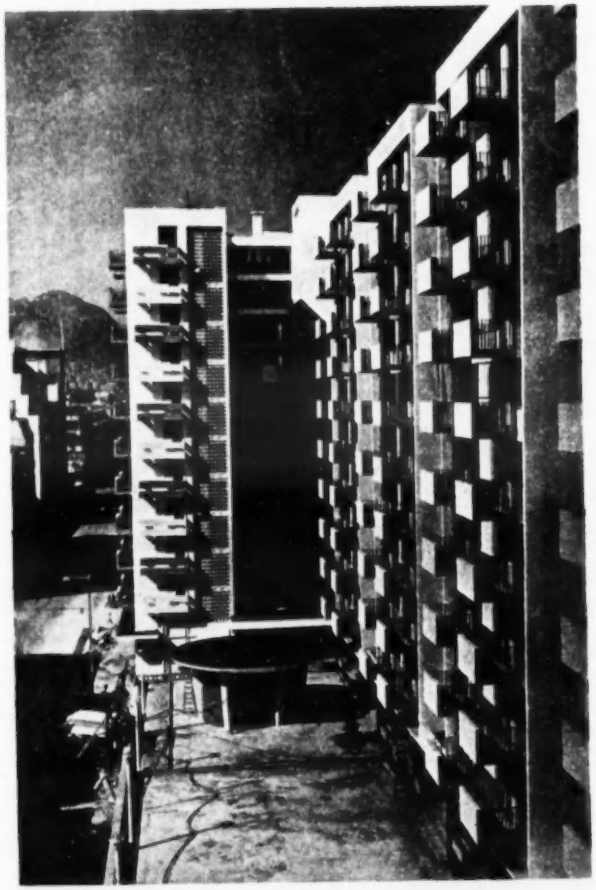
3. The Authority's policy has been to build self-contained flats, of a good basic standard that will be a permanent capital asset. The five estates already completed, under construction, or being planned, will contain about 17,600 flats, housing some 105,300 people, and representing a capital investment of over $163 millions (approximately £10 millions or US $28 millions). This may appear to be a programme of imposing dimensions, in which a good deal of pride may be taken, but it falls very far short of meeting the needs of the income group for which the Authority tries to cater, those whose family income is less than $300 a month (£19 or US $55).

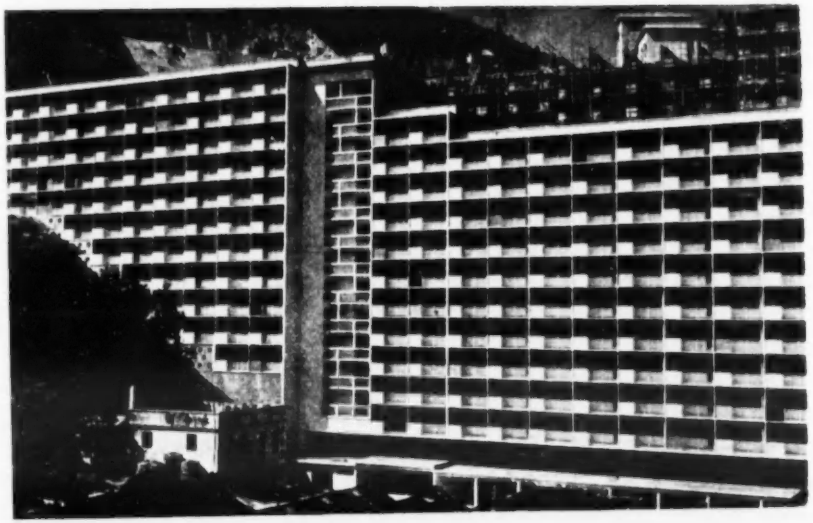
4. The North Point Estate, Java Road, which is completed, was reviewed in EKISTICS 8:45, pp. 16-23. The Sai Wan Estate, Kennedy Town, Hong Kong is now also completed, with a total of 638 flats. Plans are being made for the Choi Hung Estate, Clearwater Bay Road, Kowloon of some 7,586 flats on a 27-acre site and the Ma Tau Wai Estate, Kowloon of some 2,114 flats on a 7.2-acre site. The So Uk Estate, the most ambitious of the authority is described as following:

APPENDIX IX

LIST OF ESTATES COMPLETED OR IN HAND

Name of Estate	Built	No. of flats (sizes in persons)										Other Facilities	Total Tenancies	Capacity: No. of Persons	Area	Capital Cost
		3	4	5	6	7	8	9	10	11	13					
North Point Estate, Java Road, Hong Kong.	1956/57	240	102	140	524	304	644	—	—	—	1	71 shops, Post Office, 2 Clinics, 1 18-classroom primary school, Estate Office, Assembly Hall.	1,955	12,265	6.9 acres	$ 31,732,071.74
Sai Wan Estate, Kennedy Town, Hong Kong.	1957/59	—	—	302	—	326	—	—	10	—	—	5 Godowns, Estate Office, Welfare Centre.	638	3,892	3.7 acres	$ 8,837,244.25
So Uk Estate, Cheungshawan, Kowloon.	Programmed for 1959/62	—	238	1,166	2,092	996	773	2	—	35	—	36 shops, Post Office, Estate Office, Assembly Hall, 2 24-classroom primary schools, kerosene service store.	5,302	32,893	19.2 acres	$ 52,900,000.00 (Estimated)
Choi Hung Estate, Clearwater Bay Road, Kowloon.	Programmed for 1960/64	—	2,322	3	3,862	43	1,308	—	48	—	—	2 secondary schools, 3 36-classroom primary schools, Post Office, 45 shops, Estate Office.	7,586	43,720	22.4 acres	$ 52,460,000.00 (Estimated)
Ma Tau Wai Estate, Ma Tau Chung, Kowloon.	Programmed for 1960/62	—	—	518	1,166	430	—	—	—	—	—	21 shops, estate office, party rooms.	2,114	12,596	7.2 acres	$ 17,152,640.00 (Estimated)
Totals:		240	2,662	2,129	7,644	2,099	2,725	2	58	35	1	—	17,595	105,366	59.4 acres	$163,081,955.99





(above) Facade detail of the Java Road Estate.

(top right) A view of the Sai Wan Estate showing Cross-Contour development.

(bottom right) The Tai Hong Tung Estate, Kowloon, built on the side of a disastrous squatter fire. The white building in background is a school.

Photos courtesy of Hong Kong Information Services.

5. So Uk Estate, Kowloon. This third scheme of the Authority involves the construction of 5,302 flats, in 8–, 12–, and 16-storey blocks, for an estimated population of about 32,890 people. The estate will cost about $53 millions (£3.3 millions, US $9.3 millions) divided about equally between structure and general building costs. It will contain two 24-classroom primary schools, to accommodate 4,320 pupils in two sessions, a community hall, thirty eight shops, a kerosene service store, and an estate office.

6. The total gross area, including half width of main roads, is 20.8 acres. Site formation, which commenced in early 1957, and took nearly two years to complete, terraced the North-South slopes to provide differing levels on which to locate the multi-storey blocks, the building areas being formed along the contours of the original site.

7. The aim has been to provide ultra-high density housing, without monotony and serious overcrowding, and yet with a high degree of repetitive design in order to achieve maximum economies. Working to a master plan prepared by Mr. Eric Cumine, who designed the Authority's first scheme at North Point, four private architectural firms were engaged to design the buildings, and supervise their construction. The blocks of flats will mostly face south over the harbour, and there is provision for recreation space. This includes 50,000 sq. ft. of covered area, 40,000 sq. ft. of external paved play area, and 138,000 sq. ft. of gardens and planting, landscaped to add to the amenities of the area. * Recreational amenities include a football pitch, basketball-court, and roller-skating rink.

8. This planning gives a gross density of about 1,550 to the acre, almost exactly the same as on the North Point Estate. All the domestic accommodation on the estate is of the one-room flat type, with balcony or corridor access. Each flat is self-contained with its own kitchen, toilet and shower and drying verandah. They will be light, airy, and well-ventilated, and have easy access to refuse chutes which will have collection chambers at ground floor level. The lfats are of varying sizes, to accommodate families of from four to eleven persons, with a net living area of about 35 sq. ft. per person.

9. The general aim has been to achieve a fairly wide variety of flat sizes, and as low rents as possible compatible with reasonable amenities. The lowest rents occur in the 8-storey block which has no lifts and where rents are progressively reduced from the 5th floor upwards. The 16-storey point blocks on the third terrace have special amenities and therefore carry rather higher rents than the general average.

* Approximately 10 Sq. ft. per person. Ed.

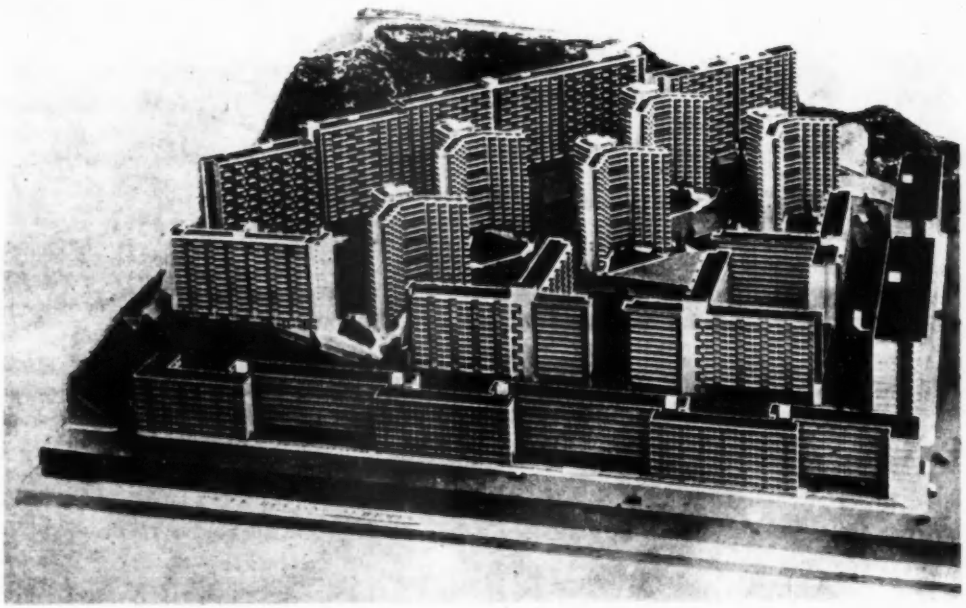


Figure 11: So Uk Estate—General view, taken in March, 1960, looking south-west. Blocks T & U are in the foreground, and behind them Blocks P and Q with tower blocks H and E on the right.

Abstracted from printed
plan "Machicote Estate"

MACHICOTE ESTATE - A COMMUNITY OF NEIGHBORHOODS PLANNED FOR PEOPLE

A. C. Kayanan

1. Machicote Estate is located in the Municipality of Carolina at the eastern edge of the urbanized area of Metropolitan San Juan, Puerto Rico. It is immediately south of the placid and picturesque Pinones Lagoon and about 2 miles southeast of the International Airport - outside the noise and flight pattern zone. It is easily accessible from Santurce and Old San Juan. At present the site has a few houses at its western extremity. Much of the land is devoted to pasture and to sugar cane. Most is zoned for residential use with 18.5 percent industrial.

2. Proposed Development. Machicote Estate is proposed to be developed not merely to provide a needed self-contained extension to the present urbanized area of Metropolitan San Juan but also to demonstrate that a community planned, promoted and constructed by private enterprise in cooperation with public agencies could at once be physically attractive, socially beneficial to both the public and the individual, and economically worthwhile to everybody concerned. Basically, the central idea in the proposed development is in line with official policies and with the evolving Master Plan for Greater San Juan.

3. The artificial lagoon is proposed to be the center of attraction for the entire development. The lagoon will pull and extend the shoreline of Pinones Lagoon inland and make the beauty of a chain of natural bodies of water available for the enjoyment of more residents and visitors of the Estate. This artificial lagoon will be dug at a position with existing lagoonal deposits and the excavated material will be used as fill where needed. The artificial lagoon will simultaneously form part of the recreational, circution and drainage systems for the Estate. It will have a part around its margin, an amphitheatre will face a floating stage with a fountain as its backdrop, and there will be ample acquatic area and docking facilities for pleasure boats.

4. The plan starts with a tacit acceptance of the basic foundation of Puerto Rican society - the family and the home. It avoids the usual gridiron pattern of streets. The plan proposes a balanced combination of land uses with residences of diversified types of lots of various sizes, the lots grouping into superblocks with playlots (for pre-school children) as their muclei. The superblocks, in turn, combine into neighborhood units with the elementary school, playground, health center and a club forming a nucleus for each unit. Then the nieghborhood units build themselves together into a well-knit community with its community center.

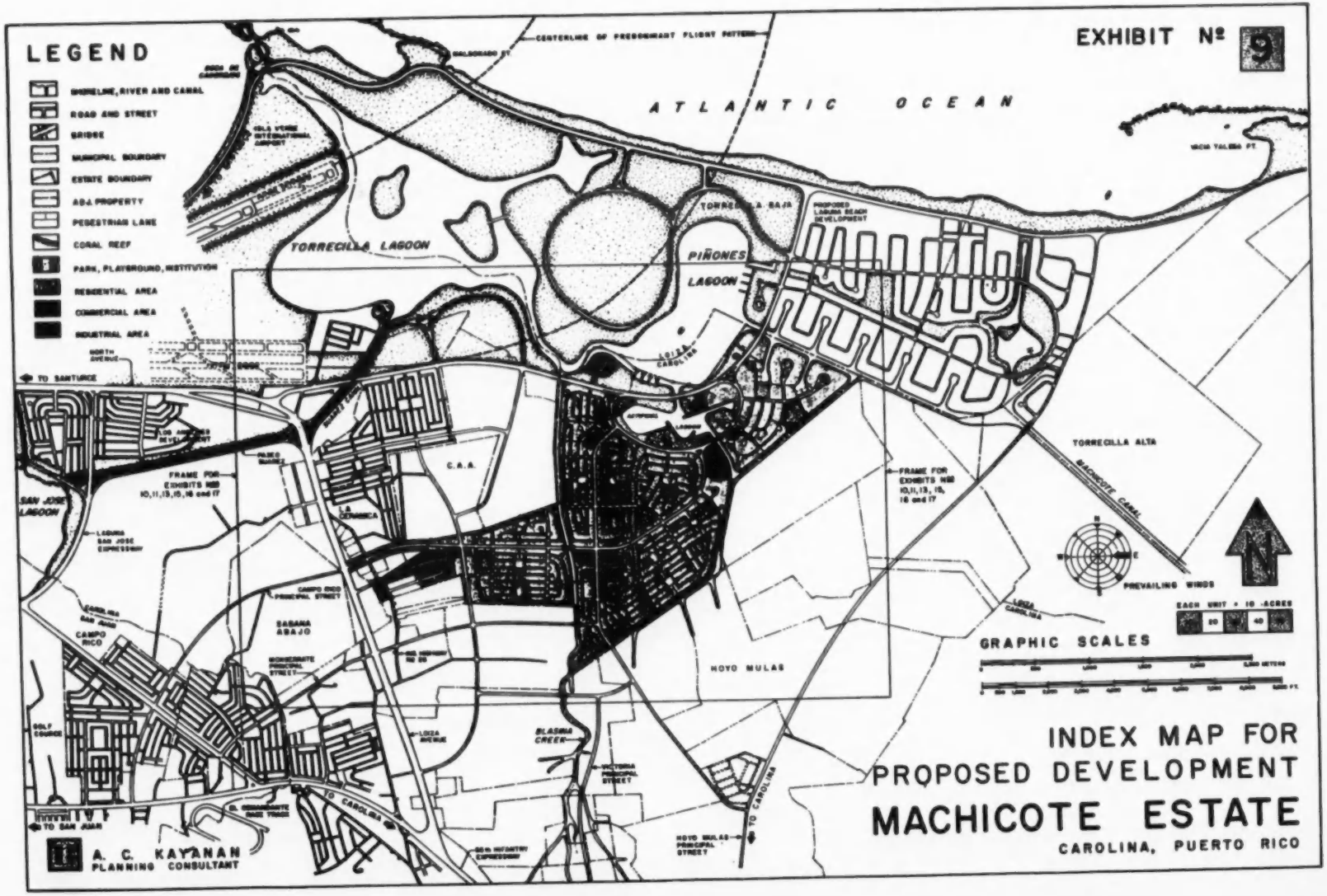
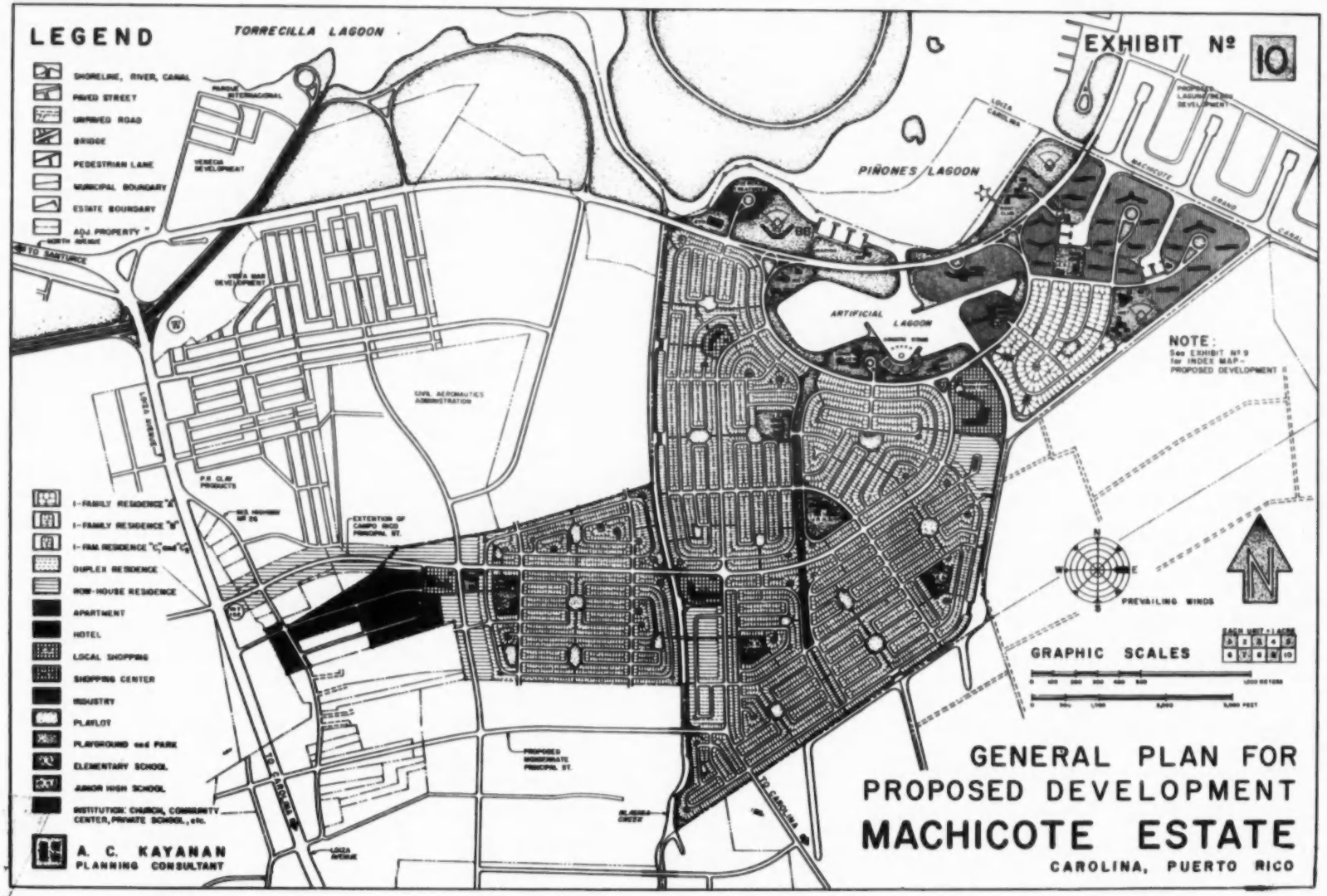


EXHIBIT Nº 9
LEGEND
SHORELINE, RIVER AND CANAL
ROAD AND STREET
BRIDGE
MUNICIPAL BOUNDARY
ESTATE BOUNDARY
ADJ. PROPERTY
PEDESTRIAN LANE
CORAL REEF
PARK, PLAYGROUND, INSTITUTION
RESIDENTIAL AREA
COMMERCIAL AREA
INDUSTRIAL AREA
ATLANTIC OCEAN
TORRECILLA LAGOON
PIÑONES LAGOON
SAN JOSE LAGOON
TORRECILLA ALTA
HOYO MULAS
BLASINA CREEK
CAMPO RICO
SABANA ABAJO
TO SANTURCE
TO SAN JUAN
TO CAROLINA
FRAME FOR EXHIBITS NOS 10,11,13,15,16 and 17
PREVAILING WINDS
GRAPHIC SCALES
INDEX MAP FOR
PROPOSED DEVELOPMENT
MACHICOTE ESTATE
CAROLINA, PUERTO RICO
A. C. KAYANAN
PLANNING CONSULTANT


LEGEND
TORRECILLA LAGOON
EXHIBIT Nº 10
PIÑONES LAGOON
ARTIFICIAL LAGOON
NOTE:
See EXHIBIT Nº 9
for INDEX MAP -
PROPOSED DEVELOPMENT
PREVAILING WINDS
GRAPHIC SCALES
GENERAL PLAN FOR
PROPOSED DEVELOPMENT
MACHICOTE ESTATE
CAROLINA, PUERTO RICO
A. C. KAYANAN
PLANNING CONSULTANT

5. Row houses, which are grouped into sociable courts, and duplexes, which are staggered to avoid monotony, adjoin the shopping areas. Small lots (325-400 sq. meters) for 1-family detached houses are towards the industrial area to the west. Larger lots (9500 - 1,000 sq. meters) are towards the lagoons. Apartments are confined to the northern section of Neighborhood No. 5 where they will justify the high cost of special foundations necessitated by lagoonal deposits.

6. The plan integrates 3 modes of circulation: car and bus, foot and boat. Mass transportaion routes follow the main arteries, and bus stops are related to pedestrial lanes. These lanes lead to the paseo which in turn leads northward to the community center. This promenade, should revive the pleasures of afternoon walks once very popular in Puerto Rico. Incidentally, the paseo will be built over an existing canal which is proposed to accommodate some of the main underground utilities.

7. The Estate will eventually house 8,000 families or over 45,000 people. It will be developed a neighborhood at a time in order to apply all the economies and efficiency of mass construction. The scheduling covers both aspects of time planning - sequence and tempo. First in the proposed sequence of development is Neighborhood No. 1 which is nearest the urbanized area and which will furnish much-needed housing in the low-cost category. Then Neighborhoods Nos. 2 and 3 will follow, in that order, and, finally, Neighborhoods Nos. 4 and 5 will be constructed, most probably at the same time that the government is developing the parks, lagoons, beaches and resort hotels in the Cangrejo-Torrecilla Area immediately to the north. The demand for housing and the other facilities contemplated is so strong that the 5 years tempo of development may even be accelerated.

8. EKISTICS has only reprinted 2 of the 17 excellent exhibits which graphically present the Machicote Plan. Their list, gives a good example of systematic presentation, mostly employing the same base map.

(1) Location map.
(2) Existing Development in the Vicinity of Machicote Estate
(3) Land Ownership in the Vicinity of Machicote Estate
(4) Existing Zoning and Official Map
(5) Existing Streets and Topography
(6) Existing Land Uses
(7) Subsoil Investigation
(8) Drainage Study
(9) Index Map for Proposed Development
(10) General Plan for Proposed Development
(11) Circulation Pattern
(12) Typical Details, eg. Schematic Detail of Typical Super-blocks
(13) Analysis of Organic Structure
(14) Quantitative Analysis of Land Use Distribution - Chart
(15) General Plan for Water Distribution
(16) General Plan for Sanitary Sewerage
(17) General Plan for Electrical Distribution

Abstracted from "Journal of the
Ceylon Institute of Architects"
First Annual Journal October 1960
Pages 37-39.

LOW-COST HOUSE CONSTRUCTION

P. N. Wijesingha

1. At the very outset it should be clearly understood that low-cost housing does not necessarily mean cheap housing. Neither does it mean sub-standard dwelling units. What is really meant is that the actual cost of building is reduced by adopting well-recognized measures, and new methods of construction, without lowering the basic standards and the quality of the building. All this may be done within the economic reach of the low income group.

2. Essential Factors.

   a. Designing low-cost houses to functional and utility requirements.

   b. Eliminating traditional and expensive methods of construction.

   c. Reducing the quantity of building materials by using simple and efficient methods of construction.

   d. Reducing the cost of building materials by mass production.

   e. Reducing cost through better organization of house construction.

3. In a low-cost house, the space organization should be so planned as to reduce to the barest minimum the circulation areas, encircling verandahs, passages, lobbies, etc. It is not meant that these should be completely eliminated, but that they should be considered in strict relation to the home's basic requirements, financial resources and future programme for expansion. The space organization in the plan could accordingly be reduced to the minimum. The plan should be functional, with the bare essentials provided. The tendency to provide wider glass areas than is actually required and to have too many elaborate doors, high separating walls and pitched roofs could be easily avoided after a close study, and a clear understanding of the specific problem in hand.

4. Research. It is in this sphere that prospective house-builders today can reduce building costs most. I shall indicate here some of the research work that has been done at the Department's Experimental Station at Jawatte. Most of the work has been carried out by Mr. L. H. Sumanadasa, Deputy Director of the Ceylon Technical College, the

various United Nations personnel who have come here as experts in low-cost house construction, and by the staff of the Town and Country Planning Department.

a. Cement-lime-sand block. A satisfactory block with an aggregate of half cement and half lime to eight sand has been developed which is cheaper than the traditional 9 inch brick. The introduction of the block is reduced by giving a lime-palm-oil wash. Plastering of either one or the other faces could be eliminated altogether with this method of construction of walls.

b. Precast lintels are very rarely used in local house building. It has been found that they can be easily and quickly erected.

c. Experiments have also been carried out to obtain economical timber sections. For a span of 8 feet a timber section of 3 inches by 2 inches, instead of 4 x 2, has been found very satisfactory. Window and door frame sections have also been reduced similarly and found to be quite satisfactory in use. These timber sections have been used in experimental houses and also in housing schemes of the Planning Department.

d. A cheap and efficient smokeless fireplace has been specially designed and built at our experimental station at Jawatte.

e. Experiments carried out at the Research Station at Jawatte have shown that the use of asbestos cement roofing sheets bring the cost of roof construction down by about 33% as against tile construction. In addition, very few timbers need be used in the roof, and the heights of the supporting walls can be reduced to the barest minimum.

Abstracted from "engineering
News-Record" Dec. 8, 1960.
Pages 24-25.

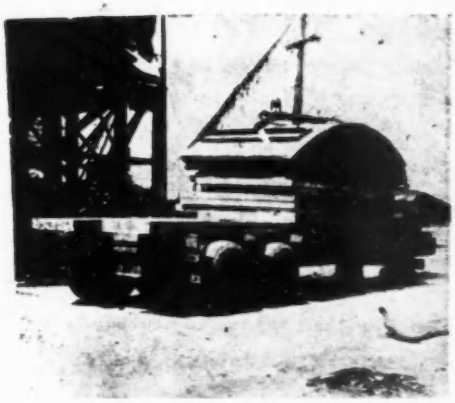
SIX STEPS TO PRODUCE A HOUSE FOR $1,000

1. Builders are rushing completion of 100 precast concrete homes for hurricane victims in the Humacao area of east central Puerto Rico. The homes are going up at a cost to the Puerto Rican government of only $1,000 each. The builders and material suppliers -- all involved in commercial housing projects on the island -- are absorbing loses on the job to make the price possible. The program was proposed by IBEC Housing Corp. (a subsidiary of the International Basic Economy Corp., New York City) within hours after Hurrican Donna cut across the island early in September.

2. Here is what IBEC and the contributing suppliers will deliver: a house shell -- nearly 650 sq. ft. in area -- on a foundation slab measuring about 21 x 30 ft. with front and back doors and eight jalousie-type windows installed. Openings are provided for later plumbing installations. The immediate goal is to get families out of crowded lowland tent areas. Drawing on existing plans and on tested components planned for future commercial projects, IBEC is erecting a precast house that includes curved end-wall panels and a twin barrel arch roof.

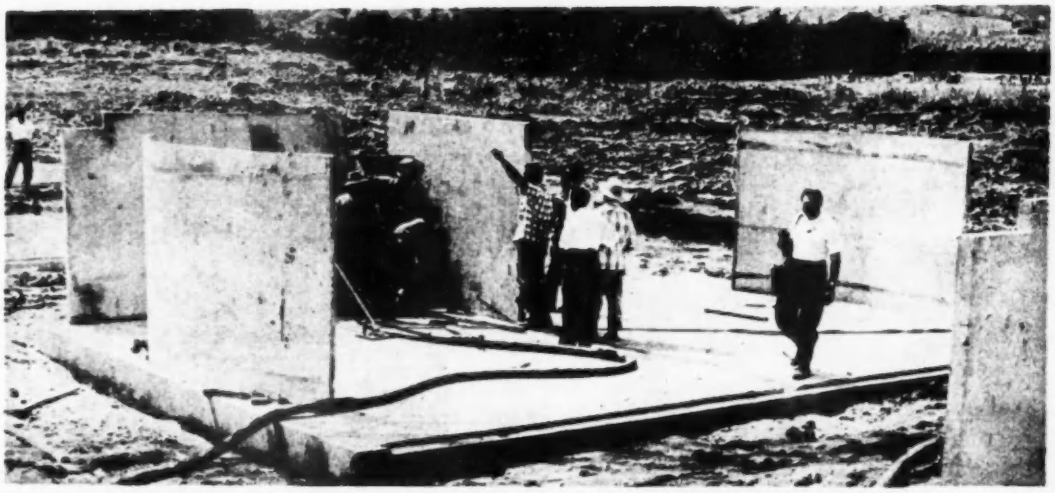
3. Components are precast in IBEC's yard at their Lomas Verdes housing project near San Juan and trucked 45 miles to the job. The entire package includes 12 elements: six flat wall sections, two curved wall sections, two roof beams and two roof sections. Two wall panels go along each side and a pair of transverse wall panels cut across the short axis of each house. At the ends of the house -- 21 ft. wide -- curved wall panels fill the center with openings at either side for a window and a door. These curved shell walls are only 2 in. thick, reinforced with 6 x 6 8-gage mest and at the corners with a single bent No. 3 bar extending 2 ft. along each edge. Their curve is just over 2 ft.; chord length is 11 ft. 9 in.

4. The roof shells, 5 tons each, rest on beams placed across the ends of the house. The beams' 2-ft. 6-in. width is enough to "cover" the entire 2-ft. width of the curve in the end wall panels directly below them. Each roof shell bears on the end beams and on the transverse wall panels for a total of six points -- three to each side of each shell. They are 2 in. thick and reinforced with the same 6 x 6 8-guage highway mest as the curved wall panels, but three No. 3 bars, bent to follow the stress pattern around the bearing points, are embedded lengthwise in each side of each shell.

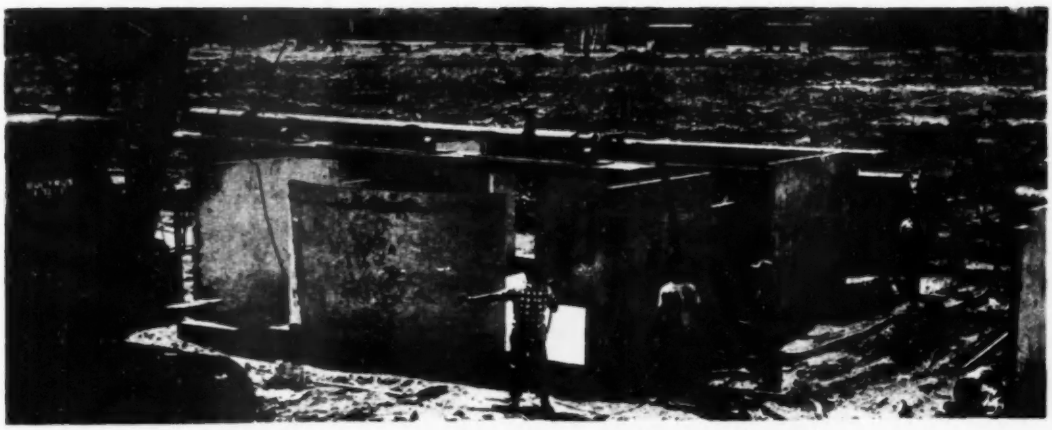


1. Simple panels move on trucks.

2. They arrive at 30-acre site 45 miles from plant.

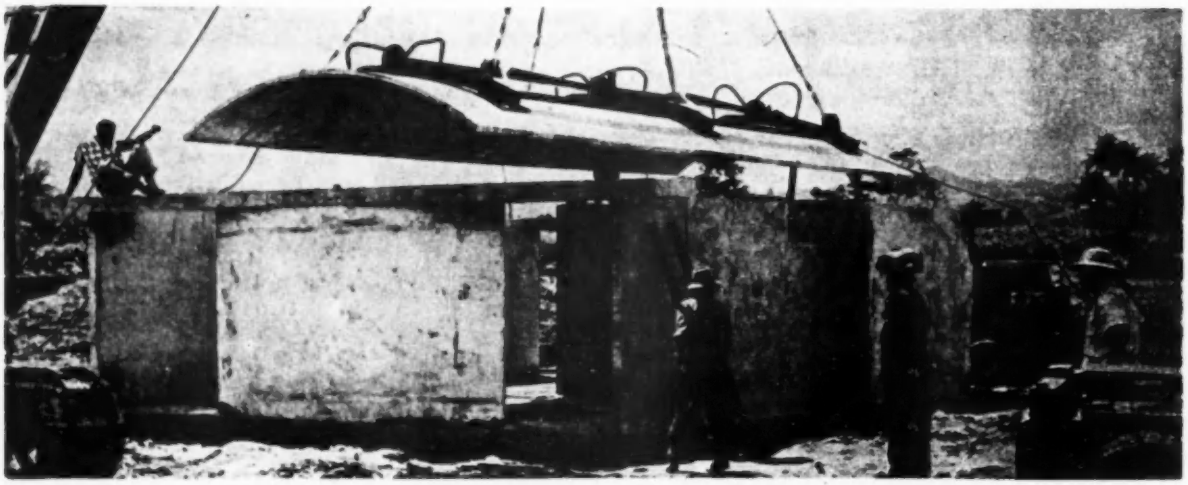


3. As wall panels are plumbed, welder tacks connections, eliminating double steps.

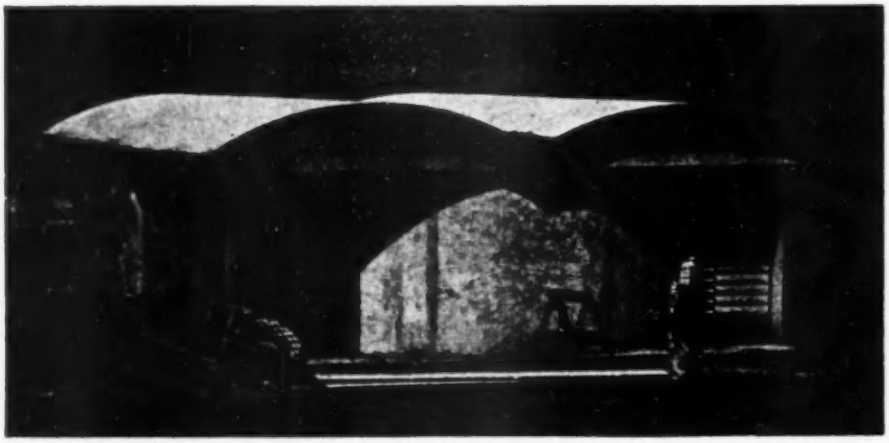


4. Vacuum mats handle roof beams spanning across curved end-wall panels.

5. Erection is quick and simple. A crew of seven erected one house in an hour to test the design for high-speed construction. Side and transverse wall panels rest in slots cast across and along the edges of the foundation slab. Bent rod loops serve as lifting eyes along the top edge of each panel; a simple channel picking frame on a truck crane shifts the units from truck to foundation. Largest wall panel weighs 2.5 tons. A welder works side by side with the placing gang, running connections between panels and from panels to foundation as soon as the wall are plumbed. IBEC employs vacuum mats to place the flat roof beams and barrel arch roof shells. Welding the six connections of each roof arch completes the house shell frame. Workmen seal the valley between the shells with a mastic and set door frames and window units.



5. Two five-ton roof shells cover each unit. Six welds per shell tie them down.



6. Complete house shell is finished in an hour.

Abstracted from a leaflet of the
National Buildings Organisation,
11A Jan Path, New Delhi

PRESERVATIVE TREATMENT OF BAMBOO

1. For extending the service life of bamboos which are subject to decay and destruction by insects and borers, several chemical treatments are available. By use of treated bamboos, cheap and good houses can be constructed which may last some time.

2. The following two compositions have been found to be useful and these can be conveniently prepared in the field.

   a. Copper-chrome-arsenic composition. It is prepared by dissolving 1 seer (2.057 lbs. or .933 kg) of arsenic pentoxide, 3 seers of copper sulphate crystals, and 4 seers of potassium dichromate in 20 gallons of water and mixing well. Because arsenic pentozide and the solution prepared from it are poisonous, great care should be taken.

   b. Copper-chrome-acetic acid composition. Add 4 seers of copper sulphate crystals, 4 seers of sodium, and 3 chhataks (7.5 ounces) of acidic acid to 20 gallons of water and mix well. This solution should be handled carefully to avoid burns from acetic acid.

3. Apparatus:

   a. Drums. Depending on the quantity of bamboo to be treated, containers are required for the preparation of the solution and application of treatment. When drums are required for storage of the solution, it is better to have a tap in the side of the drum very near to the bottom which could be used for running out the solution.

   b. Rubber tubes. Cycle or motor car inner tubes, depending on the size of bamboo to be treated, are required to carry the flow of the chemical solution from the tap of the reservoir to the bamboo.

   c. Wire pieces and strings. These are required for tightening the various joints of tubes and bamboo.

4. Preparation of Bamboo. Bamboo should be freshly cut. If it is impossible to treat them immediately after cutting, then they may be kept under water for two or three days.

5. Methods of Treatment:

a. Dipping. The easiest method is to stand the bamboo in the solution after removing their branches and leaves. But this method takes considerable time. Alternatively, freshly cut bamboos with branches and leaves may be dipped. From the transpiration of moisture from the leaves and branches which remain in air, the preservative solution is drawn up into the bamboo clumps. For treatment it normally takes about two days, but this depends on the length, specie of bamboo and climatic conditions. From the changing colour of the leaves, the progress of treatment is observed. After a little practice it can be easily seen when to stop treatment.

b. Boucherie process. Freshly cut bamboos with leaves and branches are connected with tubes to drums containing the preservative solution, as shown in figure b. The bamboos are laid on a slight incline, keeping the reservoir at a higher level so that the solution may flow from one end of the bamboo to the other. Shortly after allowing the solution to flow, the sap starts flowing out of the lower end of the bamboo. After some time, the preservative solution comes out slowly from the lower end. This should be collected and re-used.

c. Boucherie process with air pump. It air-tight trums fitted with valves are used as a reservoir of solution, a slight pressure can be applied with the help of an air-pump to increase the flow rate and to reduce the time required for treatment. The whole assembly is simple and inexpensive a and by its use the treatment can be completed within a few hours.

6. Treatment of Hollow Bamboo. A steel incisor is used for the purpose of scratching the inner surface with a view to making it more permeable to preservative solution. The hollow bamboos are hung vertically from the branch of a tree and the topmost nodes are filled with the solution. As in*the Boucherie process the sap first starts to flow through and then the solution. It should, the solution should be collected and re-used for treatment after first bringing it up again to the required strength. The nodes of the bamboo should be filled again and again with the solution.

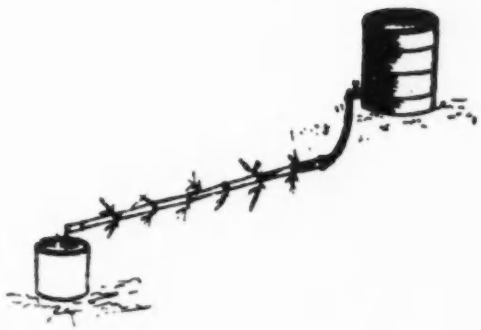
7. Duration of Treatment. The duration of treatment varies, but is generally about five days. It is often seen that 48 hours treatment is enough. With the help of air pumps the time of treatment can be reduced to a few hours. When the colour of the solution after treatment is the same as that of the reservoir, then the treatment is about complete.

Costs of Treated and Untreated Bamboo

	1 Large Size Bamboo (.8cft)		10 Small Size Bamboos (11 cft)	
	Treated	Untreated	Treated	Untreated
Cost of bamboo* (Rs)	1.50	1.00	7.00	5.00
Service life (years)	15	3	15	3
Cost of bamboo per year of its life	10 nP	33 nP	47 nP	Rs, 1.67 nP

* Editor: This is based on prevailing prices in Delhi and is included to show the relative cost of treating bamboo, on the assumption that service life of bamboo is approximately the same in any place.

Dipping Bamboos



Boucherie process of treatment

Abstracted from "Community Development
Review" Volume 5, Number 4, December 1960
Pages 51-66.

COMMUNITY DEVELOPMENT AND TRADITIONAL BEHAVIOR PATTERNS

Harry L. Naylor

1. Harry L. Naylor is serving as a community development Advisor, U. S. Operations Mission to the Philippines.

2. The Change. Recognition in many developing countries that planned social change is a significant stratagem in modernization has focused attention on ways and means to develop more fully the human and natural resources of rural areas through formal programs with stated time-shape objectives.

3. The National Community Development Program of the Philippines is a program of planned change for the agrarian sector of the country's economy. The Office of the Presidential Assistant on Community Development (PACD) has defined as its goals the endeaver to:

a. Reorient the barrio people from a passive dependence on government assistance to an active role of community improvement by strengthened civic responsibility and by enlightened training in the field of local self-government;

b. Increase food production and family income;

c. Improve health and sanitation; and

d. Promote essential public improvements.

4. In the project plan for community development a 15 percent change of attitude for (a) above was contemplated by 1960; a 60 percent change by 1966. The attempt to reorient the attitude of the barrio people as stated in the first goal of the PACD is frankly a political change considered necessary as the implosion to start the chain reaction to other changes.

5. Agents of Change. The change agents that are employed in the program are of two kinds:

a. "Organic" employees of the Office of the Presidential Assistant on Community Development (a new institution) -- the barrio workers, community development women and youth

(CD Way), educators, field training staffs, the municipal, provincial, and area community development officers; and

b. "Extra-organic" persons involved in the change process -- governors, mayors, barrio lieutenants, barrio council members, barrio individuals and leaders, technical agency field personnel, and school teachers (members of older institutions).

6. Vehicles of Change. The institutional structures or administrative and legislative vehicles established under the program for change include community development councils at the national, provincial, and municipal level. Training courses for barrio workers and orientation courses for personnel form the rural service agencies of government. Added to these are Lay Leadership Institutes for barrio lieutenants and barrio council members, instruction courses for women and youth, seminars for governors and their provincial councils and seminars for mayors and their municipal councils. Legislative assistance is provided by recent laws to increase autonomy for local units of government.

7. To give operational purpose to these new institutions, the Philippine Community Development Program has employed the familiar "aided self-help" feature basic to community development theory, in which community projects arising from the felt needs of the barrio people should be assisted by the government, providing that the land, labor and local materials are supplied by the people.

8. Felt needs, or better, unmet needs, depend upon the perception of their problems by the rural people. An education program, therefore, is implicit in all change vehicles supported by mass media communications and the techniques of group dynamics.

9. Attitude Changes. In general, the desired attitude changes run parallel to the established goals for the Program:

a. More Self-confidence and improved leadership by the barrio people to carry out their responsibilities for local government, with a corresponding rejection of political paternalism.

b. Increased rate of acceptance of technical innovations to increase food production and family income, in place of traditional, less efficient farming methods.

c. An understanding of basic public health theory and practices to replace a fatalistic acceptance of contagious diseases as inevitable.

d. The expansion of awareness that group action for community improvement supplements and reinforces the family in its role as the basic social unit for social improvement.

10. The Quest for Answers. The Community Development Research Council of the University of the Philippines is undertaking an over-all evaluation of PACD to specifically determine the answers to the following questions:

a. As a result of this prodigious amount of effort on the part of the rural people and all the government agencies involved, is there more self-confidence and improved leadership in the barrios?

b. Are the barrio people accepting responsibility for local government?

c. Are they becoming less dependent upon their political patrons for "pork barrel" assistance?

d. Are they accepting new innovations to increase food production and family income?

e. Are public health practices improving in the barrios?

f. Are the barrio people working together on the basis of community cohesiveness rather than on the basis of interfamily cohesiveness?

11. It was agreed that a series of soundings could be made which might give some view of where PACD might be on its chartered course of planned change before the full-scale evaluation was completed. Therefore some informal contacts were made in which the question was posed: "Have you seen any evidence over the past three years of a change of attitude on the part of the barrio people from a passive dependence on government assistance to an active role of self-help in community improvement?"

12. Barrio Workers. It proved unusual to find a barrio worker who covered the same area for three years. Most of the PACD training school graduates of 3 years ago had been promoted, transferred, or lost through normal attrition. It was difficult, therefore, to get a "before and After" picture of more than 2 years. But, by and large, the barrio workers felt there had been some change of attitude on the part of the people. While they pointed first to the number of aided self-help projects in their areas, they were more proud of the completely self-help projects, going on and already finished. One reason for the pride in non-government aided projects was, of course, the elimination of red tape and accounting procedures that are part of any formal aided project. Even so, they pointed out, if the barrio people are willing to do everything on their own except for technical assistance, the independence than if the project were hedged about with PACD guidelines and the feeling that the "government" is

"looking over their shoulders while they work". The barrio workers do feel, however, that the aided projects were necessary first to get the self-help idea started. Secondly, the barrio workers were encouraged by the increase of responsibility accepted by the barrio councils.

12. The single greatest difficulty faced by the barrio workers in stimulating the idea of self-help and local civic responsibility in the barrios was the political hand-out system. "Why do it ourselves, if we can get it from the politicians?" is a potent argument around election time. Or, "If the congressman gives us a barrio road, we get paid for building it, while under the PACD we do all the work for nothing." When, with actual statistics, the barrio worker can show the barrio people that it will take over 100 years for all the barrio roads in the Philippines to be built under the political system, they will usually undertake the project under the self-help principle if election day is not around the corner.

13. Municipal Community Development Officers (MCDO'S). The MCDO has one of the most difficult jobs in PACD. He must deal with the mayor, who is a political figure, who by tradition has dealt heavy-handedly with his barrio lieutenants, who belongs wholeheartedly to one of the two national political parties, who may or may not be allied to the governor by political faith, but who normally deals directly with his congressmen on political funds and the delivery of the vote. Notwithstanding, two change factors are evidence in disrupting the old dispensation. The first is that a whole new generation of public-minded young men are being elected to office throughout the Philippines, especially to the office of municipal mayor. Secondly, in the last few months a new organization, the Association of Barrio Councils, is being sponsored under PACD auspices to supplement an older organization, the Barrio Lieutenants' Association. The latter group has been a political football with strictly limited success. The local chapters of the new organization bid fair to present a united front to dictatorial mayors if need be, and, in time, might be a political force for good government of national significance.

14. Provincial Community Development Officers (PCDO's). The Provincial Community Development Officer is in a somewhat more comfortable position than the MCDO. A fair statement might be that, in general, the governors are not tied as tightly into the political machine as the mayors. There seems to be a symbiotic relationship growing up between the PACD and the office of the governor. For the first time the governor has a chance, through his Provincial Community Development Council, to meet the various representatives of the technical government departments. For the first time the governor may travel to his barrios to commend the barrio people on this or that completed

self-help project, rather than to face a barrage of requests for government help. In return the governor gives leadership and meaning the PACD program at the provincial level and supports it on national issues. To believe the relationship is perfect would be naivete; it is still necessary to continue to educate the governors on the goals of PACD.

15. Barrio Councils. Barrio lieutenants and council members are the prime movers in the change process. Theirs is the responsibility for the barrio super-ego --- the larger horizon above the normal workday facts of barrio life. There seems to be no doubt that the elective process over the last five years has improved the quality of the barrio councils and the Lay Leadership Institutes have been invaluable in this respect.

16. Community Development Women and Youth Program. The follow-up here is not yet adequate. There is an indication of a "conversion experience" here and it may be that this sub-program will prove to be a most basic instrument for social change, although normally the women in any culture are more resistant to cultural innovation than are the men if such innovations seem to be a threat to the ordered existence of the family. The woman in the Philippines is, in general, the educational equal of her husband, the fiscal depository of the family, the moral arbiter of rural society and in many cases a commercial entrepreneur.

17. Projects. Aided self-help projects should serve three purposes:

a. be of immediate economic benefit to the barrio people,

b. serve as a training vehicle for active community participation in local affairs, and

c. eventually be of use in distinguishing between the services the government should supply (eg. training in health practices, engineering services etc.) as compared with the gratuities the government should not supply.

18. Within this frame of reference, the better projects seem to be barrio roads, irrigation, potable water supplies, medical kits, certified seeds, multi-purpose pavements, and copra dryers. Less functional projects have been insect control projects (the idea that one sprayer given by PACD would generate the desire to buy others has not borne fruit); community nurseries (too long a waiting time for seedlings to become trees); and pigs and poultry projects (high animal mortality). Projects that satisfy the social requirement but not the economic desirability have been multi-purpose centers, stages for fiesta plays, and barrio beautification.

19. One criterion that would demonstrate that the barrio people are beginning to think for themselves would be new or unual projects outside the official guidelines. A few of these are found: a commercial mushroom project, a few oyster farms, a community fish net. It

may be that most barrios are still in need of projects within the guidelines. Yet the preponderance of insect control projects (sprayers), vis-a-vis other projects, would seem to indicate a lack of imagination or an absence of adequate technical training for barrio workers to propose and/or to assist barrio councils to work out a broader range of projects with economic potential.

20. Another criterion in judging whether the attitudes of the rural people are changing is the rather disappointing general failure of the "Operation Onward" plan. Because some 1,500 barrio and municipal community development workers are able to cover less than one-third of the Philippine barrios, the scheme was to move the workers to new barrios after two years, or sooner if it was felt that the indigenous barrio leadership could continue self-help development without the further assistance of PACD. It is not known how long a barrio worker is needed before community development is self-generating but the evidence is pretty clear that two years, for the run-of-the-rice-mill barrio, is not long enough, since most barrios haven't shown a disposition to carry on with increasing enthusiasm after the departure of the worker.

21. Generalities. The training, the concepts, and the temper of PACD personnel are remarkable uniform throughout the country; but the acceptance of the program is noticeably uneven. Disregarding the typical sub-cultural groups of non-Christian Philippine farming population, it may be said that the program appears to be more effective in its present form in "real" rural barrios than in semi-urban barrios or those close to municipalities; that the program fares better in newly settled areas than in old traditional barrios; that land tenure patterns have a great deal to do with acceptance or rejection of innovations; that technical innovations are accepted somewhat in this order; (1) academic education, (2) change involving greater socialization, viz., meetings, oratory, singing, acting, dancing and sports, (3) political change if based on a legalistic sense of social interaction, (4) curative medicine, (5) some aspects of public health (as a potable water supply), (6) crop pest control, and, finally, (7) new farm practices; that the ecological situation has a distinct bearing on a change of attitude in any dimension (consider the differences in the way of life of the rice farmer of the lowlands, the coconut grower, the fisherman, and the sugar cane farmer in relation to the rather unspecialized skills of the barrio worker).

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POPULATION GROWTH AND MANPOWER IN THE PHILIPPINES

A joint study by the United Nations and the
Government of the Philippines

1. This is the report of a study of population and manpower problems of the Philippines, carried out jointly by the Government of the Philippines and the United Nations Secretariat. Materials for the present study were provided mainly by the Philippine Statistical Survey of Households (PSSH), a periodic national sample survey of the population which was initiated by the Government in 1956, with the assistance of the United States International Cooperation Administration. The topics of the study, selected jointly by the Government and the United Nations Secretariat, included the relationships between population trends and the growth and composition of manpower in the Philippines, the extent of unemployment and under-employment, internal migration as a factor in redistribution of population and manpower within the country, and prospects for the future growth of the population and labour force. The present report summarizes the major findings of the study of some of these questions, in relation to the problems of economic and social development planning.

2. Introduction. In terms of population, the Philippines is one of the fastest growing countries in the world. The population has more than tripled since the beginning of the twentieth century, increasing from 7.5 million in 1903 to 24 million, by a conservative estimate, at mid-year 1958. Few countries can compare with the Philippines in this respect. Argentina, Brazil, Canada, Malaya, and some smaller countries have increased their population in a similar or even higher ratio during the last half-century, but they owe a large share of their growth to immigration.

3. Recently the rate of growth of the Philippine population has been rising still higher. According to the census figures, the average annual rate between 1903 and 1948 was about 2 per cent, but at present it is estimated to be around 3 per cent per annum. If the population goes on increasing at this rate, it will pass the mark of 50 million well before the end of the present century. Actually it is quite possible that the rate of growth will rise even higher in the near future.

4. Where the population grows at such a rate, successful planning of economic and social development depends heavily on up-to-date information concerning changes in the numbers and characteristics of the

population and manpower resources. Statistics from a census which is ten years old are not sufficient in these circumstances for the assessment of the country's needs and resources, required as the basis of a rational programme of development. Also, the more rapidly the population grows, the more important it becomes to foresee the increases which are in store for the future, and to take them into account in planning investments in such a way as to create sufficient job opportunities for the growing labour force and to ensure adequate food, clothing, housing, educational facilities, and the like.

5. Realizing the need for more up-to-date information, and more detailed information than could be obtained from the 1948 census tabulations, the Government of the Philippines inaugurated in 1956 the Philippine Statistical Survey of Households (PSSH), a national sample survey of the population. A sample of nearly 6,000 households scientifically selected from different parts of the country has been visited eight times since May 1956 and data have been collected on employment and unemployment, occupations and industries, income, size and productivity of agricultural holdings, housing and other aspects of living conditions, literacy, education, and other social characteristics, migratory movements, as well as fundamental demographic characteristics: sex, age, marital status, and fertility.

6. Urban and Rural Population. The population of the Philippines is more urbanized than that of many other countries in Asia and the Far East. In 1957, according to the estimated derived from PSSH, 35.5 per cent of the population was urban. This is not a very recent development; apparently the proportion of the population living in urban areas was nearly as high forty years ago as it is today.

7. The outstanding feature of urbanization in the Philippines since 1918 has been the constantly increasing degree of concentration of the urban population in Manila. The population of the Manila Metropolitan Area grew from 354,000 at the census of 1918 to about 2 million in 1957, and Manila's share of the total urban population of the country increased during this period from about 13 per cent to more than 24 per cent.

8. With the assumption of increasing urbanization, the rural population of the Philippines increase, according to the projection, by about 9.5 million during the period 1957-1977, its average annual rate of growth being 2.5 per cent, whereas the projected average rate of growth of the total population is 3.2 per cent per annum for this twenty-year period. The difference represents approximately the rate at which migrants would be drawn off from the rural areas to the cities (net after deduction of return-migration to rural areas).

9. The Future Growth of Metropolitan Manila. For those who must take the responsibility of planning the future economic and social development of the Philippines, the expected trend of population growth in metropolitan Manila is to particular importance in view of the large investments

in social capital which the growing population of the metropolis requires, and the strategic importance of the development of Manila's industries for the healthy growth of the national economy. Naturally, the decisions taken by government planners will themselves play a large part in determining the magnitude of population growth in the metropolitan area in the future, and therefore any projection is necessarily rather speculative. A wide range of results might be obtained, depending on the assumptions made and the method of projection.

10. Table 4.7 shows two projections of the population of metropolitan Manila to 1977. One is based on an extension of past trends in the ratio of metropolitan Manila's population to the population of the country as a whole. Rising from only 3.5 percent in 1918, this ratio reached 5.3 per cent in 1939, 7.1 per cent in 1948 and about 8.6 per cent in 1957. If it continues to rise, but at a gradually slackening rate, the metropolitan area will have about 12 per cent of the total population of the Philippines by 1977. In absolute numbers, this would mean that the population would grow from about 2 million in 1957 to more than 5 million by 1977.

11. The second projection was derived by extending the past trend in the ratio of metropolitan Manila's population to the total urban population of the country. About 13 per cent of the urban population was in metropolitan Manila in 1918; by 1957 this proportion had nearly doubled. Should the Proportion continue to rise at nearly the same high rate, metropolitan Manial would have about 6 million inhabitants, or one third of the total urba population by 1977.

12. If industrialization continues to be highly centralized in the capital, the projection of 6 million for metropolitan Manila in 1977 may turn out to be the more realistic one. If, on the other hand, the Government chooses to pursue a vigorous policy of regional development, 5 million may prove to be closer to the truth.

Table 4.6. Projection of the Population of Metropolitan Manila: 1957-77

Year	High projection	Low Projection
1957	2 014 000	2 014 000
1962	2 616 000	2 535 000
1967	3 463 000	3 209 000
1972	4 643 000	4 063 000
1977	6 238 000	5 142 000

13. Population Density and Land Use. In view of the rapid rate of growth of the Philippine population at present, and the likelihood that this rate of growth will continue, and even rise higher during the next two decades, population trends need to be considered in relation to the land resources of the country. This is particularly important in a country like the Philippines, where a high proportion of the population depends on agriculture for a living.

14. Unlike some other countries in Asia, the Philippines cannot be considered at present to be suffering from "over-population" of the country as a whole. In 1957 there were estimated to be about 78 persons per square kilometre. This figure is, to be sure, much higher than the density of population in North and South America, where there are on the average about 9 persons per square kilometre, or in Oceania, where the corresponding ratio is only 2. However, in comparison with Asian countries such as Japan (245 persons per square kilometre), Ceylon (140) and India (120), the Philippine density does not appear very high. Moreover, the Philippines has an advantage over some other Asian countries in that it possesses large land resources as yet unexploited. According to the projection comparable with the 1957 PSSH estimates, there would be 146 persons per square kilometre in the Philippines by 1977.

15. The number of persons per square kilometre of the total area is not a very satisfactory measure of the relationship between population size and land resources, since it takes no account of the use made of the land, nor the size of the population which must earn a living from agriculture. More refined measures have to rely on very unsatisfactory data in many cases.

16. The increase in the number of persons to be supported per agricultural worker amounts to 24 per cent over the twenty-year period, constituting an average annual increase of 1.1 per cent per year. Agricultural productivity would have to be increased at this rate only to take into account the increasing ratio of population to agricultural workers. In addition, it must be remembered that food production in 1957 fell considerably short of requirements. If the country is to achieve self-sufficiency in food production a still greater increase in the productivity of the agricultural labour force will be required.

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1960. Pages 103-137.

OVERPOPULATION AND UNDEREMPLOYMENT IN THE WEST INDIES

Jack Harewood

1. Jack Harewood, Director of Statistical Services, Central Statistical Office, Trinidad, has prepared a comprehensive paper on overpopulation and underemployment with a great deal of information on the economy, population, migration, employment, unemployment, underemployment, wage structure and hours of work in the most important islands of the Federation. EKISTICS abstracts his conclusions which consider the likely effects on the future employment situation of economic development and migration (both between the Federation and other countries and between the various units of the Federation.

2. Economic Development. Jamaica and Trinidad are the two units which are sure to experience appreciable economic development in the immediate future. Because as many as 44 percent of those with jobs in Trinidad and Tobago are underemployed in terms of income earned (and the proportion in Jamaica is appreciably higher), an increase in the number of better-paid jobs resulting from this economic development will not lead directly to a reduction in unemployment in the short run but to a shift of employment to the high-earnings sector from the low-earning sector and from outside the labour force. But, as opportunities for high-earning employment increase, there is likely to be a decline in the overall labour-force participation rates, especially through the withdrawal of dependent women and to a smaller extent, of young persons, from very low-earnings occupations. This may well lead to a decline in total employment.

3. Of special interest are the likely effects of economic development on unemployment. In the long run the aim will no doubt be the achievement of full employment. But in the short run, since unemployment tends to be higher in the towns (where there is less opportunity for underemployment and job-sharing than in agricultural areas), we would expect unemployment to tend to rise with increasing urbanisation. The incidence of unemployment is also likely to increase for other reasons. First, with higher family incomes more persons, while seeking employment, will be able to afford to stay unemployed rather than engage in some form of underemployment. Secondly, with more high-wage employment and in general greater economic activity, persons who formerly remained outside the labour force because there were so few opportunities for suitable employment may actively seek work. Finally, frictional unemployment, occurring because people are seeking to shift to higher-paid jobs, is likely to increase when there are more opportunities for such shifts.

4. The probability that economic development will not itself cause any rapid decrease in unemployment is an extremely important matter for persons concerned with economic development in underdeveloped territories in general. It means that in assessing the results of any economic development programmes it is "the success that we have in creating employment that is relevant rather than our failure in reducing unemployment in a short period of a decade or so". * This point needs emphasising, for it has been the traditional point of view that the aim of any economic development programme in the West Indies should create a sufficient number of jobs to reduce unemployment to the point where it no longer represents a serious problem.

5. Migration. Migration is likely to affect Jamaica and Trinidad in quite different ways. As regards migration between the West Indies and other countries, it is conceivable that Jamaica will continue to have an appreciable outward movement for some years. On the other hand there is unlikely to be any appreciable net emigration from Trinidad and Tobago. Outward migration will, of course, reduce the problem of overpopulation and underemployment and, if it assumes considerable proportions, Jamaica may well overcome its worst problems earlier than might otherwise be expected. Emigration, however, has its costs for a country seeking to develop rapidly, the principal one being the likelihood of losing just those skilled and semi-skilled workers that are in short supply.

6. Migration between the various units is also likely to be extremely imporatnt, especially in view of the large differences in prosperity between Trinidad and Jamaica on the one hand and the smaller units on the other. With the complete freedom of movement of persons between the units that will exist from 1963, a movement may develop from the poorer units to Trinidad in particular, and to a lesser extent to Jamaica, similar to the exodus from rural to urban and industrial centres in other countries. Any important immigration into these two units will necessarily, in the short run, offset the effects of economic development on the employment situation.

7. This brings us to a consideration of the future of the smaller units, a problem in which Trinidad and Tobago must, for the above reasons, be vitally interested. At present it is precisely these smaller and poorer islands in which comparatively little is being done to develop the economy. While some migration is to be expected in any case, this can be no final solution to the problems of the West Indies but may prove detrimental to both the smaller and larger islands. Since Jamaica and Trinidad are already both committed to even greater efforts to encourage economic development, it might well be that the challenge facing the West Indies to improve the economic welfare of its people will resolve itself into a challenge to influence the rapid economic development of the smaller units.

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*W. A. Lewis: "Employment Policy in an Underdeveloped Area", in Social and Economic Studies, Vol. 7, No. 3, Sep. 1958.

Abstracted from United Nations
Document E/CN. 14/63. 6 December
1960. Mimeographed. 125 Pages
7 Tables.

TRANSPORT PROBLEMS IN RELATION TO ECONOMIC DEVELOPMENT IN WEST AFRICA

Economic Commission for Africa

1. The programme of work and priorities adopted by the Economic Commission for Africa at its second session included among research topics "selected problems of transport in Africa, with emphasis on transport deficiencies as obstacles to economic development and ways of removing these deficiences". As it was through advisable to reduce the scope of this subject by approaching it from the regional point of view, it was decided to confine the study to "West Africe", the guiding principle being the availability of pertinent facts and figures rather than any strict geographical concept. The present study does not pretend to deal fully with all the transport systems in West Africa or with all the problems confronting them. It aims merely at a discussion of some important questions that are more or less common to the whole region.

2. Natural Conditions. Natural conditions in West Africa often constitute obstacles to rational transport development. Behind a narrow costal plain, averaging for the continent only 20 miles in depth, there rise steep slopes, which make the building of railways and highways difficult and costly. While West Africa is in this respect somewhat more fortunate than East Africa, since the plateau is lower, routes are nevertheless often very difficult, e. g. in Sierra Leone and Guinea. Another consequence of the topography is that streams are likely to descend over falls and rapids from the plateau in the interior.

3. While the topography of the region is thus generally inimical to the establishment of transport services, climatic conditions cause even more serious difficulties. West Africa can be roughly divided into six vegetation zones, ranging from the coastal grasslands and rain forests in the south to the Sahara desert in the north. Many of the main transport routes run south-north and pass through all or most of the northern region.

4. The tropical forest is in the sense the most formidable obstruction to overland communications, whether by rail or road. The torrential rains and density of vegetation make surveying and building and maintaining of railways and roads extremely difficult and expensive. In the savannah zone, rains are a seasonal problem; but during the wet season they are often torrential and make many routes impassable. High humidity creates oxidization and speeds deterioration of plant and equipment. In the semi-arid zone, however, the very lack of water has been a serious obstacle,

especially to railway operation. The construction and use of railways and roads may be greatly affected by climatic conditions; but river traffic is even more so, mainly because of the extreme variations in water levels between the rainy and dry seasons; hence the minor imporatnce of most rivers in West Africa as main transport routes, although they all carry traffic.

5. An important requirement for the development of an efficient transport industry is an adequate supply of power. Costs of transport in a district are affected by its transfer relations with sources of power supply, and the transportability of the various sorts of power. A district which is close to a cheap coal supply and has good communications with it, for example, may have fairly good transport even though the topographical conditions are unfavourable. A case in point is Nigeria whose Eunugu mines contain the only important coal deposit in West Africa, although the quality is rather poor. Few important oil wells are as yet exploited in West Africa, although some deposits are known.

6. The demographic pattern of a region is of course one of the basic natural factors governing transport development. While West Africa has the highest average population density in tropical Africa, the population is scattered owing partly to climate and relief but also to traditional factors. Attachment to a traditional location may be so strong that even where the soil is poor and adjacent to more fertile land, this may remain unoccupied.

7. Communications have been largely responsible for the location of towns in the past and for the urbanization of the coastal regions in more recent years. Thus many towns grew up on trade routes, especially where easily defensible halts could be established. Special requirements, particularly in areas using primitive means of transport, have sometimes determined the location of a town, e.g. that of Kano in Nigeria, which was a caravan halt of special importance as goods were transloaded there from camels to donkeys, horses or human porters.

8. Economic Structure. Movements of goods, except over very short distances, mainly concern export crops and mining products, for the carriage of which the transport systems of the various countries were primarily designed. Exchanges of goods between production zones for the purpose of diversifying standards of living are still unusual, although exceptions exist, such as the exchange of salt, dried fish, meat and cattle from regions in the north for timber and kola nuts from the forest provinces. In this connexion, it may be pointed out that not all of these goods travel by mechanized transport; cattle, for example, still usually move on the hoof. The demand of West African industry for transport serivces, is still slight, except as regards building materials, owing both to the low level of industrialization and to the location of industries. Most plants, especially oil-producing factories, are to be found in ports, as their products are largely exported.

9. Transport in West Africa is still largely characterized by the movement of heavy, low-grade commodities in bulk. The modes of transport best suited to this type of traffic are the railways and, to some extent, inland water transport.

10. Since the Second World War, there have been some important changes, both qualitative and quantitative, especially in the adaptation of transport to general economic development needs. One striking feature has been the extraordinary increase in transport activities, especially at ports coupled with systematic modernization of the railways in many countries and considerable expansion of road traffic in all countries. Of particular interest in regard to goods traffic is the fact that imports have increased in volume faster than exports. The composition of export traffic has undergone some important changes that have necessitated new transport arrangements. One example is the enormous growth of the timber industry in Ghana where only half-a-dozen species were known to the trade before the war as against seventy now, thirty of which are utilized commerically.

11. Transport in West Africa in General. As one expert aptly puts it: "Almost nowhere in tropical Africa is there a fully integrated transport complex permitting a rational selection of either road, rail or air transport." This state of affairs is most marked in regard to domestic markets: where economic aspects predominated, the various modes of transport were developed with the primary aim of promoting foreign trade. Hence, the movement of goods, except between ports and their economic hinterlands, remained singularly restricted until fairly recent times - a fact which was reflected in transport costs. To mention only one example, the cost of transport between the port of Abidjan on the Ivory Coast and almost any point in Upper Volta would, until quite recently, not have been less than that for a shipment from Marseille to Abidjan!

12. Conclusions. One particular result of better transport in West Africa is the substantial incrase in the volume of export-import and domestic traffic. Improved facilities have also brought in certain new traffic items, for which the existing modes of transport were formerly unable to cater. Increased traffic then makes it economically sound to introduce modern handling equipment in ports.

13. Transport improvements have been directly responsible for the raising of new crops for the export market (bananas) and the domestic market. For instance, yams, which are widely grown form the domestic market in Nigeria are so bulky and of such low intrinsic value that they would hardly ever have been moved in large quantities, without the present new, cheap road transport. Better and cheaper transport, especially of perishable foodstuffs, is of great importance also because it gives the people a chance of a more balanced diet.

14. The most spectacular effects of improved transportation will presumably be felt by the peoples of the northern areas of most of the countries, who will have routes to travel to the cities of the south where there is employment. Communications between different areas of a country will also be facilitated.

15. Improved transport must be combined with a corresponding expansion of production and trade. The latter must have reached a certain level before expenditure on transport is justified; and to judge when that has been attained is one of the most difficult problems in framing development policies. The impact of transport improvements, though bound to be felt in the long run, may not be immediately apparent. The populations concerned are almost invariably conservative and tied by habits in production, trade and transport. Should a particular transport improvement, like the construction of a railway or a trunk road to "open up the country", be thought to imply a change in productive methods or a need to find a new set of customers, there may well be some opposition to the innovation from both farmers and retail traders. The latter may, for example, be obliged to re-organize their business; they may find they need to borrow more; and they may gradually lose their independence by having to take more partners into the business.

16. Generally speaking, one problem common to all countries is the lack of survey information as to the traffic on the highways. In addition study of intra-regional integration of road systems are needed.

ROADWAYS AND RAILROAD TRACK IN WEST AFRICA

Country	Size Sq. Miles	Railroad Track Miles	Roads Miles	Vehicles Passenger	Commercial
Dahomey*	44,290	5,200[a]	3,224[a]		
ex-French West Africa		2,542	50,220[a]	34,400[b]	46,500[b]
Ghana	91,843	591	18,413[c]	15,500[c]	15,300[c]
Guinea	94,925		4,836[a]		
Ivory Coast*	127,520		10,416[a]		
Liberia	43,000		734[c]		
Mauretania*	18,120		2,294[a]		
Niger*	458,976		5,270[a]		
Nigeria	339,169	1,781	36,700[c]	24,000[c]	18,400[c]
Senegal*	76,084		7,254[a]		
Sierra Leone	27,926	311	3,427[c]	3,000[a]	1,800[a]
Sudan	967,500		6,944[c]		
Togo	21,500	274	2,774[b]	1,100[b]	1,800[b]
Upper Volta*	106,011		10,230[a]		

* Members of ex-French West Africa
a - 1956
b - 1957
c - 1958

Sources - Tables 3 and 4,
1961 Information Please Almanac, Atlas and Yearbook

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